JUL 3 1923

ESTABLISHED IN 1872

PAPER TRADE JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

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FIFTY-FIRST YEAR

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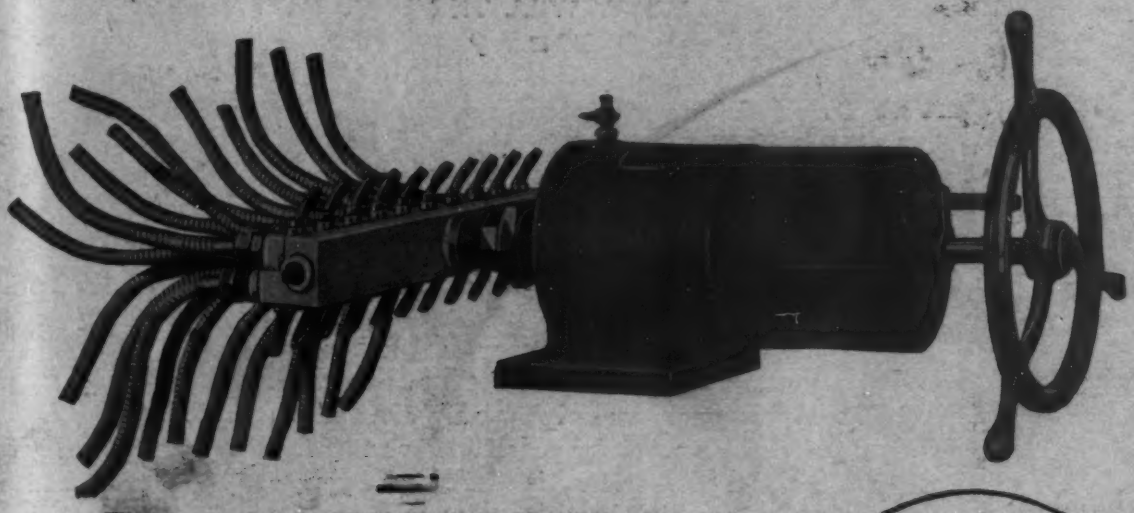

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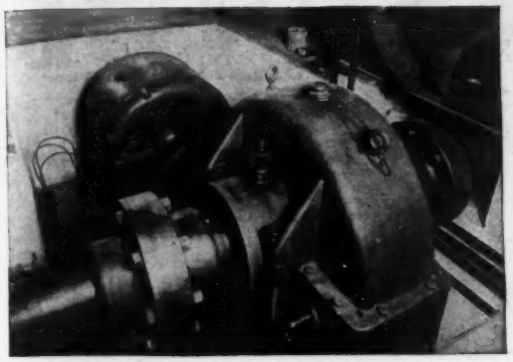

Cleveland Worm Gear Reduction Unit applied to mill line shaft. Motor 400 H.P. at 1200 R.P.M. Ratio in worm drive 14 2/3 to 1.

How long will a worm gear last?

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The Cleveland Worm & Gear Co.

America's Worm Gear Specialists

CLEVELAND, OHIO

Cleveland WORM GEAR REDUCTION UNITS

PAPER TRADE JOURNAL

ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-FIRST YEAR

Published Every Thursday by the

LOCKWOOD TRADE JOURNAL CO., INC.

LESLIE R. PALMER, PRESIDENT · GEO. S. MACDONALD, VICE-PRESIDENT & TREAS. · F. K. HOPPIE, SECRETARY

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TABLE OF CONTENTS

	PAGE
Northern New York Superintendents Meet	23
Demand Spotty in Philadelphia	24
Adjustments of Fire Loss to Garrett-Buchanan	24
Removal of Receivership from Phil-Fibre Co.	24
Electrification of Lang Mills	25
Hemingway Co. Gets Waste Contract	25
Pulp and Paper Prices in Germany	25
Toronto Paper Mill Corp. to Start	25
Miami Valley Superintendents Meet	25
Canada May Embargo Pulpwood	26
Heavy Damage by Forest Fires	26
Technical Section Meets in Montreal	26
Edwards Interests Buy Colonial Lumber Co.	27
British Capital Backs Northern Quebec Railroad	27
Norwegian Pulp and Paper Market	27
Fort Orange Paper Company Elects Officers	27
Demand Slower in Chicago Market	28
To Settle Wage Question in Holyoke	28
Toronto Demand Continues Fair	30
Transfer of Pulpwood Concessions	30
New Pulpwood Unloading Equipment	30
University of Michigan Adds Research Service	32
Monroe Adds Another Industry	32
A Big Paper Board Town	32
Resigns from Bryant Paper Company	32
OBITUARY	34
Canada's Heavy News Print Exports	34
Finland's Paper Exports Increase	34
American Paper Imports to Lima Grow	34
New York Trade Jottings	36
News of the Boston Trade	36
Imports of Paper for March	38
Exports of Paper for March	40
EDITORIAL	42
TECHNICAL SECTION	45
COST SECTION	58
Imports and Exports of Paper and Paper Stock	60
Bids and Awards for Government Paper	64
MARKET REVIEW:	
New York Market Review	62
Market Quotations	63
Miscellaneous Market	66

Want and For Sale Advertisements, 70, 71 and 72

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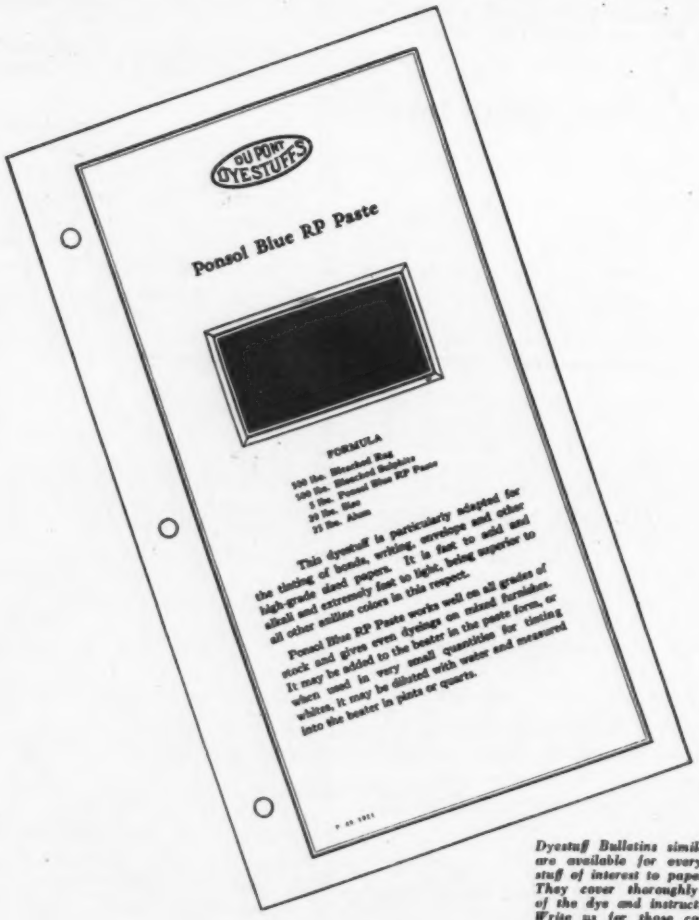
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ESTABLISHED IN 1872

PAPER TRADE JOURNAL

Vol. LXXVI. No. 26 NEW YORK AND CHICAGO Thursday, June 28, 1923

NORTHERN NEW YORK SUPERINTENDENTS MEET

Homer J. Stafford, Superintendent of Knowlton Bros., Is Re-elected to Head Division at the Annual Meeting and Dinner at Watertown—Afternoon Is Spent in Visit to Plant of Bagley & Sewall Co. and Various Paper Mills in the Vicinity—Prominent Speakers Address the Delegates on Timely Subjects —List of Those Present.

[FROM OUR REGULAR CORRESPONDENT.]

WATERTOWN, N. Y., June 25, 1923.—The annual spring meeting and dinner of the Northern New York Division of American Pulp and Paper Mill Superintendents' Association Thursday afternoon and evening at the Hotel Woodruff was a big success.

About 50 delegates from this division gathered at the hotel early in the afternoon for the convening of the first session. A delegation were guests of the management of the Bagley & Sewall Company and were taken on a tour through the plant showing them the various types of machines manufactured and the complicated process of manufacture. Others of the group more interested in paper mills in this section were guests of the various mills during the afternoon.

Homer J. Stafford Re-elected Chairman

Delegates met at the hotel at 4 o'clock again for an important session in the grill of the hotel. Homer J. Stafford of Knowlton Brothers was elected chairman of this division for the ensuing year after having served in this office for the previous year. William Brydgers of the Defiance paper Company of Niagara Falls was elected vice-chairman and William G. Argy of the St. Regis Paper Company was re-elected to the office of secretary and treasurer.

Walter J. Rooney, representing the Albany Felt Company, gave an illustrated talk during the afternoon session showing the manufacture of felts by his company and also the manufacture of paper in Japan. The afternoon session adjourned at 6 o'clock and the evening session convened at 7:30 o'clock at which time the entire group were present for dinner in the hotel.

Speakers of Prominence

Speakers at the evening session were of prominence and included Claud E. Nicly, president of the La Salle Paper Company of South Bend, Indiana, H. Edmund Machold, speaker of the assembly, Ralph S. Baker, president of the Chamber of Commerce, Mayor Robert E. Cahill, Edward S. Lansing, George W. Sisson, Jr., president of the Racquette River Paper Company and J. H. O'Connell, past national president of the association as toastmaster.

Mr. Nicly in addressing the assembly said in part: "The paper industry is filling a long felt need of value to other industries for it is teaching them the value of co-operation and the value of teaching the men to produce.

"There is the important and vital question of protection. Canada is situated economically and naturally to take the industries within her borders and for this reason the industry needs protection. It needs protection against tariff and fraternalism. Out of every 20 men there is one of them a government official. Therefore the government is reaching into the individual business. Taxes are up The industry is prosperous but we are producing more and more and the demand is growing less and less. The employees are better paid now than during the war and this does not augur well for future of the country. We must become more efficient, lessen cost by interchange of ideas and pay more attention to the men who make laws. We must have a closer application of politics. Politics affect the business of the country and we must pay closer attention to them. The immigration laws are in a bad way. The Englishman and Scandinavian make the best citizens. We must send men to our government to make laws who can reduce expenditures and taxes if we are to prosper. It can be done in the government for it can be done in any business. Everything can be accomplished."

George W. Sisson, Jr., Speaks

George W. Sisson, Jr., president of the Racquette River Paper Company, said the future of the paper industry rests with the superintendents. He said that the American skill and ingenuity belong to America even though Canada has her vast natural resources. He further said that if Canada wished to conserve her natural resources and her streams and forests and yet take the paper industry within her borders then it was international unfair play which he condemned. The manner of offsetting this fact rests with the superintendents, he said.

Addresses of welcome were given by Mayor Robert E. Cahill and Ralph S. Baker, president of the Chamber of Commerce. Mr. Machold brushed aside all legislative problems and spoke briefly on "co-operation" during part of which he said: As I observe conditions today time is opportune for co-operation in all lines. Petty jealousies have been brushed aside and out of associations of this type mutual benefit of great value may be derived. I congratulate you men for the organization for an association of this type and wish you continued success throughout your careers.

Among Those Present

Those present at the meeting included: W. J. Livingston of the Dexter Pulp Paper and Sulphite Company; J. H. O'Connell of the Diana Paper Company; James Quinn and W. W. Hollis of the Hinde & Dauch Company; G. B. Loomis of the North Counties Coal and Supply Company; C. T. Wright of the Champion Paper Company; Washburn Weston of the American Wringer Company; Paul D. Luce of the Boston Woven Hose and Rubber Company; H. A. Horstman of the Kuttroff Pickard & Co., Inc.; G. W. King, H. E. Rodigan, C. A. Lura, and H. E. Newcomb of the St. Regis Paper Company; D. H. Montville of the Shartle Brothers Machinery Company; C. J. Bishop of the United States Rubber Company; F. A. Cornell of the Foundation Company; E. E. Martin of Bagley & Sewall Company; F. E. Cuddeback of the General Electric Company; H. T. Robbins of the SKF Industries Inc.; R. S. Martin

(*Continued on page* 25)

DEMAND IN PHILADELPHIA IS OF SPOTTY CHARACTER

Some Dealers in Fine Paper Report Excellent Business While Others Complain About the Market—Prices in This Division of the Market Are Stabilized and Dealers Do Not Look For Any Radical Price Changes—Conditions in Coarse Paper Not So Satisfactory with Prices Less Firmly Maintained—Fire Insurance Adjusted on Big Garrett-Buchanan Fire—General Trade News.

[FROM OUR REGULAR CORRESPONDENT.]

PHILADELPHIA, June 26, 1923.—To pick out one term or phrase aptly to describe the very varying conditions in the fine paper trade of the week virtually is impossible. Characterizations of the week's trading varied with the expression of opinion by every firm whose views were sought. Firms, whose line of sales is more or less specialized of course, represented the extremes of expression of market conditions. Some had a run on their particular specialty and therefore business to them was good to excellent. Others whose special lines did not enjoy the favor of the week found business dull and draggy. Perhaps, however, a fair criterion of the general market is found in the report made by the Garrett-Buchanan Company, that June sales up to the closing of business last week was in excess, week by week, of any corresponding period since the beginning of the year save for two weeks in March. The Paper House of Pennsylvania, while up to the average on regular business, is far ahead on tonnage in its special line of imported news print. The Franklin Paper, whose business is largely specialized lines, reports that sales from the beginning of May until the close of last week, considerably exceeded those of any corresponding period in its history and therefore surprising as it may be were of course better than in the height of the war day prosperity.

Fine Paper Prices Stabilized

All the fine paper trade is well satisfied that prices are apparently stabilized and none look forward with any concern to a horizontal reduction, despite arguments advanced by consumers who attempt to justify their reluctance to place orders for future requirements by expression of opinion that paper prices are too high and must come down. There unquestionably is quietness almost approaching a slump in the printing industry and particularly among the larger firms buying extensively from stock. The publishers and the big printers to whom direct mill shipments are made are still placing quite satisfactory orders.

Varied Coarse Paper Market

In the coarse paper trade, there was more variation in business than in the fine, and generally conditions are far from satisfactory. Prices in but few lines are firmly maintained by the distributors and where there is an apparent opportunity to make a large sale, quotations are adjusted to meet the conditions encountered. Tissues and grey bogus are in very small demand and prices on the latter have in the last fortnight eased off about $5 per ton. Mill quotations on butchers manilas were made as low as 4½ cents and side run news as low as 3¾ cents f. o. b. mill. Contract news is slightly less. Nearly all grades of paper bags declined about 5 per cent during the week. Chip board maintains the $57.50 level and curiously enough news is now on a parity with chip. Paper stock packers report virtually no change from the market conditions of a week ago and though mixed and commons are in very small demand packers not disposed to mark down quotations because there are a number of mills in such need of stock that they are willing to pay the prices which have been maintaining for the last few weeks. The largest local consumer announced at the close of last week a reduction of $1 per ton in the price it is paying for mixed and commons, but this is given no greater significance than that this particular mill has enough stock on hand for immediate requirements and therefore lowered its prices until the necessity for an increased supply arises. The market for the better grades of stock continued quiet and without fluctuation, mill buying, though small, being sufficient to keep the packing houses pretty well cleaned out. The supplies of this grade of stock which is being received by them is of course small.

Adjustment of Fire Loss to Garrett-Buchanan Co.

Fire insurance payments on losses sustained by the Garrett-Buchanan Company, through its Palm Sunday afternoon conflagration have now all been made save for the use and occupancy company policies. The amount involved is approximately that which Vice-President Thomas estimated immediately after the fire or in the neighborhood of $600,000. Meanwhile work is steadily progressing on the reconstruction of the properties 16, 18 and 20 South 6th street, and 7, 9 and 11 South Marshall street, the ones to which the fire was confined. The other properties, 12 and 14 South 6th street, and 3 and 5 South Marshall street, escaped damage structurally but some loss to stock was sustained through smoke and water. A new roof is in place over the burned out buildings and most of the floors have been restored. Steel ceilings are finished on the first floor front to which the executive offices, now in 12 and 14 South 6th street, will be removed on September 1. The firm is confident of being in full occupancy of all the warehousing space by November 1, because, save for the new elevators being installed the reconstruction and renovation work is now about 70 percent completed. The two new elevators will be in the rear of 18 and 20 South 6th street and will have a capacity of 4,000 pounds each. In the reconstruction work two radical departures were made. All the heating apparatus is being concentrated in one fireproof vault built of concrete with thick walls assuring absolute safety. All the electrical equipment, including the big transformers, also is being concentrated in a vault under the sidewalk specially constructed by the Public Services Corporation and sealed in such a manner as to be accessible only by it. The Garrett-Buchanan Company itself could not enter this vault even if it desired to do so. During the week the firm made disposition of a considerable amount of damaged paper to which under the adjustment of fire losses it held title. The greater quantity in 18 and 20 South 6th street, susceptible of being salvaged has been or still is being removed by a recovery concern under the direction of the fire insurance companies to the Swanson warehouses where the reclamation is proceeding. There is considerable interest in trade circles on the amount of the stock which can be recovered and on the way in which it will be placed on the market. Some apprehension is expressed that so large amount may be thrown on the market as to temporarily, at least, disturb conditions.

Removal of Receivership from Phil-Fiber Co.

Through decision just rendered in the United States District Court by Judge McKean in the case of the Shartle Brothers Machine Company vs. the Phila-Fiber Box Board Mills, Inc., authorizing issuance by the defendants of capital stock to creditors in full payment of claims as per agreement control of this organization, comes back to Daivis Newman and Charles A. Simmons. Two years ago the Phil-Fiber finances became so involved as a consequence of war time reaction that for the protection of all the creditors receivership proceedings were instituted and George Beves and David Cohen were appointed receivers. The order by Judge McKean had the effect of discharging the receivership. During the receivership business improved and the firm's embarrassment, due in part to its capital expenditure for

new equipment, was relieved. There recently was started the erection of a new shipping house which will replace, at a cost of $10,000, the old structure destroyed by fire over a year ago. During the year of receivership there also was installed a new Sturtevant Heater system, new electrical lighting system, motors and steam boilers. There are now nine buildings in the group constituting the plant and it now has a capacity daily of 50 tons of chip, news and folding box board. The other officers besides President David Newman are Esther Newman and David Caris.

Electrification of Lang Mills

There were perfected during the week by the John Lang Paper Company, 24th and Vince streets, and the Philadelphia Electric Company, which has a monopoly on the supply of current in Philadelphia, arrangements whereby part of the power used by the mill will be supplied by the public service corporation in order to relieve the load on the boilers in the mill. A complaint had been made of the emission of an undue amount of smoke from the paper mill boilers. As a consequence, since there was not room to install additional boilers, the mill agreed after conference with city authorities to arrange for purchase of power from outside. The new arrangements were perfected under the supervision of general manager J. A. Lafore.

Hemingway Co. Gets Waste Contract

The E. D. Hemingway Company, Elbow Lane, has just received a renewal covering the year, of the contract which it held with the Typothetae of Philadelphia, for the collection of the waste from the plants of those holding membership in the Waste Paper Division organized a year ago. The first contract was largely experimental and was awarded after competitive bidding. No bids were asked for the ensueing year, officials in charge of the division expressing the opinion that the Hemingway services had been so satisfactory that no change was desired. The new contract differs only slightly from the old and mainly in a closer classification of the lower grades of printers waste or paper stock.

Trade News Items

Elmer E. Garrett, operating the Forest Mills near West Chester, Pa., made trade rounds during the week. He has in contemplation the installation of additional electrical equipment for the production of carpet lining, sheathing and container board. The mill is well booked up with orders.

The Philadelphia office of H. H. Barton & Son Company, Inc., manufacturer of sand, emery and garnet papers and allied lines, will be removed July 1 from 109 S. 3rd street to the manufacturing department at State Road and Bleigh street.

Isaac C. Yoder, a paper manufacturer whose experiences cover almost half a century but whose mill at Barto, Pa., is most modernly equipped for the production of bogus manila and a line of specialties, was a Philadelphia visitor during the week. While the product of the mill is only of small volume it is of high grade and is distributed almost entirely by three Philadelphia firms.

The 72 inch Harper Fourdrinier recently acquired by Harvey Garrett, principal owner of the Darby Mill near Lansdowne, Pa., and operated by the Edwin P. Garrett Company, is being installed.

William L. Saunders, representing the Albemarle Paper Company, Richmond, Va., called on the trade during the week. He said that recently improvements had been made the plant which increased its capacity from 15 to 45 tons daily of Dixie Kraft and blotting papers. Distribution is to be restricted to the paper jobbers.

Thomas Gamble, well known in paper stock circles, returned to the city during the week, after an attendance at the conclave of Koran Grotto, a Masonic organization, in Cleveland. He is the Chief Justice of the Grotto.

NEW YORK SUPERINTENDENTS MEET

(*Continued from page 23*)

of the St. Regis Paper Company S. F. Munger and Carlton A. Denny of the St. Regis Paper Company, Leonard Mann of the National Anilin Chemical Company; J. McLean of the Sherman Paper Company; S. H. Slack of the Sherman Paper Company; Martin Nolon; Fred Norwood of the International Paper Company; Levi A. Fralick of the Algonquin Paper Corporation; C. Dawley; H. L. Ropes of the Sherman Paper Company; N. Rigabar of the National Paper Products Company; E. L. Outerson of the Carthage Pulp, Paper and Sulphite Company; C. B. Martin of the St. Regis Paper Company; E. G. Eddy; E. J. Nolon of the Diana Paper Company; M. E. Avery; H. J. Cadwell; C. A. McLennon; F. J. Rooney of the Upson Company; R. Van Amber; H. E. Rockwood of the Champion Paper Company; Thomas Holt and Theodoro Stafford of the Racquette River Paper Company; W. G. Davis of the Albany Felt Company; G. H. Spencer of the SKF Industries, Inc.; H. E. Stafford of the Knowlton Brothers; M. J. Cornell of the St. Regis Paper Company; C. B. Thwing of the Thwing Instruments Company and W. J. Argy of the St. Regis Paper Company.

Pulp and Paper Prices in Germany

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 26, 1923.—Consul General Coffin, at Berlin, has sent the following report to the paper division of the Department of Commerce, in connection with the June prices of paper and pulp:

"The inland prices on German sulphite pulps, effective June 1, have been set as follows, quotations per hundred kilograms; Illa unbleached, 293,610 marks; Ib unbleached, 308,800 marks; Ia unbleached, 320,040 marks; Ia bleachable, 349,820 marks; Illa bleached, 400,890 marks; and Ia bleached, 417,590 marks. Export prices to the United States are $6.30 for grade Ia unbleached, $6.90 for Ia bleachable, and $9.40 for Ia bleached. Kraft paper is quoted at 3,400 marks per kilo, domestic price, or $0.38 per pound for export to the United States. Prices on news print, in domestic and export trade, are 2,559 marks per kilo and $0.0347 c. i. f. per pound, respectively."

Toronto Paper Mill Corp to Start

[FROM OUR REGULAR CORRESPONDENT.]

TORONTO, Ohio, June 25, 1923. The Toronto Paper Mills Corporation has recently taken over the Hartje Brothers Paper Company mill at this place and is expending $50,000.00 upon repairs and new machinery. It is the intention to commence operation in about a week on the production of chip board, liners and indented papers. The capacity of the mill will be 70 tons daily.

The company has secured as its selling agents the La Boiteaux Company of Cincinnati, Ohio.

The officers of the Toronto Paper Mills Corporation are W. H. Kimberland, president and general manager; Blaine McKee, treasurer; V. N. Franz, secretary; M. J. Powers, superintendent.

Miami Valley Superintendents to Meet

[FROM OUR REGULAR CORRESPONDENT.]

MIDDLETOWN, Ohio, June 25, 1923.—The next meeting of the Miami Valley Division of the American Pulp and Paper Mill Superintendents' Association will be held June 29 at Piqua Ohio.

The Orr Felt and Blanket Company has extended an invitation to members of the association and all paper manufacturers in the valley to be at their plant at 1 o'clock, daylight saving time or 12 o'clock standard time, at which time the company will furnish a luncheon. After the luncheon the members will be taken through the plant to be followed by a lecture on the process of felt making.

It is hoped that there will be a very large attendance.

CANADA LIKELY TO ADOPT EMBARGO ON PULPWOOD

Measure Introduced by Minister of Finance For Restricting Export of Pulpwood From Privately Owned Lands May Pass at This Session of Parliament—Immense Damage Caused in Past Few Weeks by Forest Fires—Technical Section of Canadian Pulp & Paper Association Holds Enjoyable Meeting in Montreal—Large Profits Being Made by Premium on Exchange on New York.

[FROM OUR REGULAR CORRESPONDENT.]

MONTREAL, Que., June 26, 1923.—THE PAPER TRADE JOURNAL representative understands that there is strong assurance that the measure introduced in the House of Commons by the Hon. W. S. Fielding, Minister of Finance, for placing an embargo on the export of pulpwood from Canada from privately owned lands as well as from Crown lands, will be adopted at the present session of Parliament. There is evidence that American interests holding freehold titles to forest lands in Canada, or purchasing pulpwood from Canadian holders of freehold lands, feel quite sure that they will not be able much longer to obtain raw material from Canada. In this connection, it is stated that while the export of pulpwood from Canada had not shown any increase during the past 10 years, up to the end of the last fiscal year, there has been an increase of approximately 25 per cent. in exports of pulpwood from Canada, during the first four months of the present fiscal year.

While there is considerable support in the press for Mr. Fielding's proposal, there is some question as to the necessity for such a measure. Thus the *Montreal Star,* says that "there is a feeling that the fewer restrictions there are, the better it will be in the long run," adding, that "what might be hastened by legislation would come naturally in a few years at any rate." The *Montreal Herald* points out that considerable pulpwood cut by settlers on their farms is exported to the United States, and it adds that "It is a question for serious consideration by Parliament as to how far they should interfere with the marketing of products from private properties. Many farmers and settlers may consider it a distinct hardship to have their market restricted."

In regard to this point, THE PAPER TRADE JOURNAL representative understands that Mr. Fielding is likely to ask for discretionary powers in putting the proposed embargo into effect and that it is likely settlers will be allowed to sell pulpwood for export under a licensing system until such time as the market for pulpwood in Canada is able to absorb all that they cut.

Heavy Damage By Forest Fires

There is no longer any doubt that immense damage has been caused in Canada during the past few weeks by forest fires. Large areas of forests in the Provinces of Ontario, Quebec, and New Brunswick, have been destroyed. In Quebec some 400,000 acres have been swept by flames and, incidentally, the property destroyed includes 125 farms, 15 sawmills, 20 large lumber camps, 4 railway stations, and 2 log haulers. In New Brunswick some of the finest areas of virgin forests have been destroyed as well as approximately 100 houses, a number of sawmills, and several churches. The damage in New Brunswick has been mentioned as over $5,000,000, but the PAPER TRADE JOURNAL representative is informed that it is much beyond this figure and that the destruction tends to jeopardize the whole future of the lumber industry in New Brunswick. Both in New Brunswick and in the Province of Quebec the forests have been absolutely closed for an indefinite period to everybody and quite a number of sportsmen who had come to Canada to camp and fish in the forests have had to return home.

These forest fires have naturally given impetus to the demand for an embargo on pulpwood, as serious fears are entertained of a pulpwood famine in the not distant future. It is generally believed tthat most of the fires have been caused by settlers in clearing farms in forest areas and the opinion is expressed that the Provincial Governments should cease their policy of colonization in forest districts. In view of the increasing value of the forests and the increasing menace of forest fires, it is regarded as an anomaly that the Provincial Governments should make a grant of $4.00 per acre for all forest areas cleared by settlers for farming purposes.

Technical Section Meets in Montreal

The Annual Summer Meeting of the Technical Section of the Canadian Pulp and Paper Association has been held in Montreal during the past week. The members attended a banquet in the Ritz Carlton Hotel and visited the plant of the Howard Smith Paper Mills at Beauharnois, by means of motorboat, and they were the guests of the Senneville Golf Club at luncheon, when J. O. Ross, of the Engineering Corporation of New York and Montreal, spoke on the elimination of moisture from machine rooms—a subject which is of considerable topical interest to the industry at the present time.

R. S. Kellog, secretary of the News Print Service Bureau of New York, was one of the speakers at the banquet. He emphasized the importance of the industry to the life of North America as a whole, pointing out that recognition of its worth was accorded during the war, when paper makers in the United States were exempt from military service. Education was also dependent on paper, for without it books could not be made and the swift progress of education in latter-day years was largely due to the discovery of wood as a prime substance for the manufacture of paper. He drew a perturbing picture of vanishing forests when he compared the systems of wood replacement adopted on the North American continent with those in Germany and the Scandinavian countries. The American system was rather a lack of system, for figures proved that the countries of Europe grew as many trees as they used, while such was far from being the case here. A million cords of wood was now annually used in North America for paper, and worse than this, 130 million cords had been consumed within the last half century. "There is urgent need to set our house in order," said Mr. Kellog, who said he began to smell the smoke of forest fires when he left New York and continued to have the odor in his nostrils here in Montreal. "Either the fires must be controlled or prevented before their inception or the paper making industry must die," was the form of ultimatum placed before the paper-makers by Mr. Kellog.

Discussion by the members revealed the fact that the young members just entering the business were in some cases hopelessly undertrained. It was said that with an industry so influential and extensive as the pulp and paper trade, this was deplorable, for means should be available, as well as the proper spirit, to ensure the entry into the ranks only of those who would be able properly to represent their industry.

O. F. Bryant, chairman of the technical section of the Laurentide Company, was in the chair. A. P. Costigan, Toronto, was among those who believed that many of the newcomers to the business were undertrained. Dr. B. Johnsen, of the Hammermill Paper Company, Erie, and H. W. French, of the same concern, both felicitated Canadians on their hospitality and their zeal in upholding the traditions of the pulp and paper industry.

One feature in connection with the meeting was a visit paid by the members to the Lachine plant of the Dominion Engineering Works on Friday morning. The party, consisting of representatives from most of the large pulp and paper mills as well as several visitors from the United States, were taken through all the different departments, where the interesting features of the various paper mill contracts, now under construction, were carefully explained.

Great interest was evinced in the construction of large gears for the huge dryer rolls. Some unusual designs in bearings, winders, granite rolls were also the subject of discussion. Among the representatives of the association were O. F. Bryant, of the Laurentide Pulp and Paper Company, chairman of the association; Edward Beck, secretary. Among visiting members from the United States were R. S. Kellogg, secretary-treasurer of the Print Service Bureau of New York, and W. G. MacNaughton, secretary-treasurer of the Technical Association, Pulp and Paper Industry of New York. At the conclusion of the visit, the party proceeded by motor bus to an afternoon's outing at golf.

Profits from Premiums on Exchange

The Canadian companies exporting news print to the United States have for some time past been making appreciable profits on exchange, ranging from 1½ to 3 percent on New York funds. It is estimated that 18 Canadian shippers of news print have benefitted to the extent of $4,992 per day on shipments having a selling value of $75 per ton. In other words, Canadian news print mills, through the exchange premium, will be richer by some $1,497,600 through profits on exchange, should the price of news print and the present premium average on New York funds be maintained until the end of the year.

Edwards Interests Buy Colonial Lumber Co.

The announcement is made that the Edwards Lumber & Pulp Company, Limited, Ottawa, has bought the Colonial Lumber Company, of Pembroke, Ont. The latter company had an annual output of from 20,000,000 to 25,000,000 feet of pine lumber and it is predicted that the production will be doubled under the new administration. A new pulp mill will also be constructed at Pembroke.

Gordon C. Edwards, of Ottawa, is the president of the new company.

Another Brompton Dividend

At the meeting of the directors of the Brompton Pulp and Paper Company in Montreal during the week, the most important feature was the declaration of 4 percent dividend on the preferred stock, following a declaration of 2 percent in April, and a similar declaration in May, making a total of 8 percent paid on arrears of 12 percent. It is expected that the remainder of the arrears will be paid off and the dividend payment brought up-to-date during the summer. Managing Director Bothwell reports business as being very encouraging.

British Capital Backs Railroad in North Quebec

Within 12 months the interests behind the Bay Sulphite Company and the Chicoutimi Pulp and Paper Company hope to have under construction a railway running from Port Alfred at the head of the Saguenay River to a point on the Peribonka River. This group of companies controls in freehold large areas of pulp lands on the Peribonka River. Pulpwood must now be floated down the Peribonka to Lake St. John and from Lake St. John through the Grand Decharge and the upper Saguenay to the mills at Chicoutimi and Port Alfred. The railroad would cut many miles off their journey for the logs. It would be about 45 miles long in the first section, although later additional sections might be built to a total of 120 to 150 miles. These would run around the north of Lake St. John to tap the Canadian National lines. Negotiations are now in progress between the Quebec Provincial Government and G. R. Hall-Caine, representing the British interests in the companies, looking to an arrangement for the construction of the line. It is likely that the Provincial Government may be induced to make grants of land to aid the construction of the road on the ground that it will open up an area that is believed to be suitable for colonization on a satisfactory scale.

Norwegian Pulp and Paper Market

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., June 20, 1923.—American Consul Carlson at Christiania has sent the following report to the Bureau of Foreign and Domestic Commerce on the Norwegian pulp and paper market:

The first three months of 1923 have been more favorable to the Norwegian wood pulp and paper trade than the corresponding period of 1922, although exports for the period are considerably lower than those for the same quarter in 1913. In respect to news print, exports during the first three months of this year have been considerably greater than those of either of the other years mentioned, while for wrapping paper the tendency seems to be downward.

The cellulose market in Norway continues to be firm, and the recent increase in prices seems to be based on a sound and normal series of developments. The chief market for Norwegian cellulose continues to be the United States, other overseas markets being subject to fluctuations, while the American market is very stable.

The leader in the market is strong sulphite, although kraft, for which there is a very large demand, is a good second. These conditions are without doubt directly attributable to the long-drawn out strike in Sweden, which has recently ended. Buyers apparently desire to cover their demands for longer periods of time in advance, which forecasts a stabilization of current prices, now running as follows:

Clases of Pulp	March 21, 1923 Norwegian Crowns	April 4, 1923 Norwegian Crowns
Prime moist groundwood (spruce)	120	120
Prime dry groundwood (spruce)	...	...
Sulphite, bleached	560	560
Sulphite, easy bleaching	390	395
Sulphite, strong	365	385
Sulphate, easy bleaching	355	360
Sulphate, kraft	345	350

The paper market is firm with considerable advances in prices in several grades, which was first noticeable early in March. The effect on prices of the strike in the Swedish cellulose and wood pulp industries was not observable until after it had been in progress for some time. The newsprint market was stable throughout the early months of 1923. A large number of orders for thin newsprint have been received, especially from China, South America and India. Large quantities of M. G. sulphite have been sold recently at prices around £1 10/0d. higher than those current in February. There is still a demand for the above grade of paper, and factories show no inclination to reduce prices. The market for kraft continues lively, with quotations at about the same level for the past two or three months.

With respect to the finer grades of paper, prices have not advanced as in the case of the cheaper grades, but with a general increase in paper prices as a background, the Norwegian manufacturer hopes for an increase in the higher grades as well in the near future. Recent quotations at Christiania were as follows: Newsprint, £16 0/0d.; kraft, £24 10/0d.; greaseproof, £27 0/0d.

The following table indicates the exports of wood pulp, cellulose, and paper from Norway during the first two months of 1920, 1921, 1922, 1923 and 1913:

January-February	Mechanical Wood Pulp Metric Tons	Cellulose Metric Tons	News Print and Wrapping Metric Tons
1923	71,000	33,000	33,000
1922	33,000	24,700	24,000
1921	37,000	20,600	15,000
1920	55,000	40,000	29,000
1913	84,000	37,000	37,000

Fort Orange Paper Co. Elects Directors

TROY, N. Y., June 25, 1923.—The following have been elected directors of the Fort Orange Paper Company at Castleton: Peter C. Brashear, W. Gordon Latham, William T. Sawyer, Robert S. Harris, Matthew J. Gray, Harry J. Determan, Mercer P. Moseley, Charles L. Briggs and Charles E. Gardner.

DEMAND SOMEWHAT SLOWER IN CHICAGO PAPER MARKET

Conditions, However, Do Not Cause Any Concern and All Houses Are Decidedly Optimistic as to Fall Trade—George K. Gibson, Chicago Sales Manager of the Wausau Sulphate Fibre Co., Says Matter of Price Stabilization Should Have the Attention of All Paper Men—J. M. Abell, of J. W. Butler Paper Co., Says That While Market Is Off Some It Is No Cause For Concern.

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, June 26, 1923.—The Chicago market is in a depressed condition though not seriously so; it is a situation in keeping with other conditions, and as such reflects not an inward disturbance but an outward readjustment. All paper houses report satisfactory conditions, not withstanding a falling off or slight decrease. Some houses state that they have orders enough to keep them running into the Fall. Others say orders continue to come in. But withal things are not just what they should be.

G. K. Gibson Optimistic

Paper houses are quite optimistic as to the fall. One of the most optimistic houses is the Wausau Sulphate Fibre Company, of which G. K. Gibson is Chicago sales manager. Mr. Gibson says that his concern is fully satisfied with general market conditions; which is clearly reflected in the fact that his concern has made no changes in prices in twenty months. It has been one continuous effort to stabilize prices; for if prices are shot up the consumer has a kick coming and if prices are down, the manufacturer and the wholesaler is sore, as Mr. Gibson expresses it. "We have not a kick to make," said Mr. Gibson. "We are justly satisfied, for orders continue to come in with regularity and we have now enough business to keep us busy until fall, and our plans call for some expansion that would belie any dissatisfaction with us, from any angle you might view it. We have tried, and I want to emphasize this, for over twenty months to keep prices firm—to stabilize them, and we have things on a thoroughly satisfactory price basis. That means something to a concern that makes wrapping paper only. There are many things to fight within the trade; and we are trying to get all members of the paper association in Chicago to do the same thing, for in such action prices would be stabilized. And, remember, we have kept prices firm as against all conditions. I am happy to state that we view the situation with much optimism; much gratification. And from what I learn other paper houses have much to be thankful, regardless of the fact that business is off or slow and gives some concern. But the hot weather we have been having has been a strong factor against us; the decrease in a week has been very noticeable, and that is when the hot spell began."

Falling Off Quite Natural

R. Wadsworth, of the Bradner-Smith & Co., says, "the present falling off is quite natural and should give no cause for alarm in any respect whatever. The mills are half sold; orders are a bit below normal, with a strong undercurrent for fall business heavier than last fall, and that is the first time when indications for future business were so strong and positive. So the talk about depression now is mere twaddle. It is a reflection of outside conditions that exist in business generally. Of course, the paper business is subject to the conditions of other business. But until the trade or industry shows, which it does not now, an inside disturbance or weakness of itself, there is surely no cause for alarm."

J. M. Abell Says Market Has Held Well

J. M. Abell, of the J. W. Butler Paper Company takes much the same view of matters out this way. "No change to speak of," said Mr. Abell. "The market has held well since June 10." Since then there has been a slight falling off but not enough to cause any worry—just a bit depressing. You know that when things are not just what they were just previously, one becomes depressed and he talks in terms of depression; when as a matter of fact there is no depression. I look for a continued falling off for the next six weeks in tonnage. But the fall prospects look very bright. The market for plain book paper is very good; but for coated paper not brisk nor encouraging at this particular moment. There is a good demand for bonds, except the cheap sulphite bonds. The general demand is, however, about on its usual level."

E. J. Cady & Co. Doing Splendid Business

E. J. Cady, of E. J. Cady & Co., 1019 Hearst building, was not so communicative as to general conditions. "I hate to express myself on general paper conditions at this time. Mind me, I am not reflecting at all on the paper industry. I believe that the industry is in better shape today than it ever was. But there are outside conditions that are uncertain; that it causes one to hesitate just what to say. We are doing a splendid business. Orders continue to come in right along and there are good prospects. Just what might cause one to fear any upset in the paper trade I cannot quite figure out. I do not think there is any single fact that can be pointed to as possibly producing a serious disturbance. But that is far as I can see at this time."

Conditions Not Disturbing

Arthur R. Rapp, thought the market quite sluggish. "But I have been away for three weeks and that makes a difference. But orders are off a bit and I note here and there certain indications that cause me to feel that the trade is passing through a slight depression. But there is nothing permanent about it—out this way at any rate. Chicago of course is a good index, but at that I am not in the least disturbed over the conditions as I have found them. This hot weather would make any one depressed. And I believe with its passing orders will pick up considerably."

Notes of Personal Interest

G. K. Gibson, Chicago Sales Manager for the Wausau Sulphate Fibre Company, has had conferred upon him the title of the "Ultimate Consumer" because of his humorous articles and speeches in behalf of the ultimate consumer as the logical and ultimate factor to be considered in all manufacturing problems. His view point is that the ultimate consumer must be considered in all matters; that his resources are limitless; his buying power runs into the billions, and he controls the volume of business of the United States. He concerns himself also with the labor problem; and must find the solution between employer and employee.

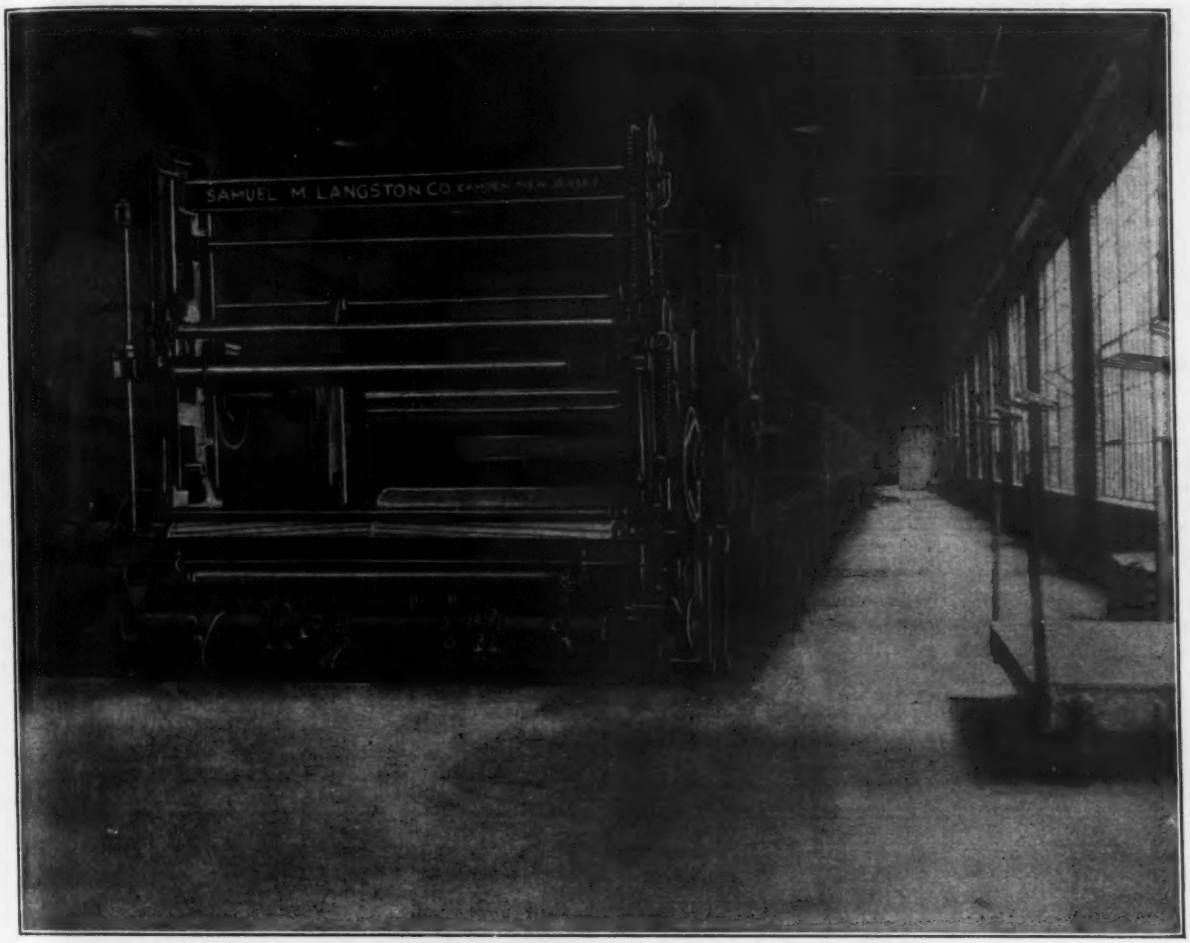
Arthur R. Rapp, has just returned from a three weeks trip to Denver and other western points. He states that the western country is going right ahead but feels happy always when he gets back to Chicago.

The Chicago Paper Association is to hold its regular monthly meeting throughout the summer.

To Settle Wage Question in Holyoke

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., June 25, 1923.—The paper manufacturers of Holyoke and vicinity will give a definite answer Friday of this week to the Paper Trades Council in regard to their recent request for increase in wages and shorter hours. The Council not only desires a 10 per cent increase in pay but elimination of Saturday night and Sunday morning work and guarantee on the part of the skilled help of a certain number of days employment each week. The manufacturers are represented by Adam Wilkinson, of the American Writing Paper Company; Arthur B. Thorpe, of the Franklin Paper Company, and Franke E. Taylor, of the Taylor-Logan Company Papermakers.



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PAPER DEMAND IN TORONTO CONTINUES OF FAIR VOLUME

Effect of the Heated Spell Is, However, Being Reflected in Absence of Large Orders—Market For All Varieties of Pulp Is Falling Off, with Some Easing in Prices—I. H. Weldon, President of the Provincial Paper Mills, to Leave For England—Howard Smith Paper Mills Makes Improvements at Cornwall—G. W. Pauline and J. M. Findlay Acquire Interest in Ritchie & Ramsay.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ontario, June 25, 1923.—There is a fair amount of business being handled by paper merchants at the present time although the decidedly warm weather has proved a set back in some quarters. There is, however, an absence of large orders. No decided change is looked for for some time and the usual midsummer quietness will prevail. The mills are kept busy. There is a good call for tissues and toilets and all summer specialties in the tissue line and prices are holding firm.

There is a slack demand for kraft and wrapping papers and the printing trade is rather dull in Toronto although it has picked up appreciably at a number of outside points. Some departments of the converting trade are rather inactive but, generally speaking, manufacturing stationers are enjoying a fair business. There are few changes in prices to record although there are some revisions and evening up.

The wholesale trade have been advised of an advance of twenty per cent in coated board, which includes translucent board and similar lines employed for advertising in street cars and other mediums. Raw materials have lately undergone some price changes in the better grade of filler, which is secured by the mills from the United States, has been going up, which has caused the producers to move up their quotations on the finished article.

The market in all grades of pulp has been falling and there has been some easing up of prices, especially in unbleached sulphite pulp. The drop in demand in the pulp line has not been so marked in Canada, it is reported, as across the border and Ontario plants are still having a fair demand. Board mills are kept busy and the call is active, in spite of the fact that the paper box makers are finding trade rather spotty. The boom in the building line has created a lively requisition for sheathing and building papers.

The Strathcona Paper Company, of Strathcona, Ont. is running both of its machines full time. The company will install another boiler so that it will have more steam capacity and be able to increase its output. It intends also to erect a good sized stock room for taking care of their raw material.

Paper Men Leave for Long Trips

I. H. Weldon, president of the Provincial Paper Mills, Toronto, leaves in a few days for England and will make a motor tour of the British Isles. He will be accompanied by Mrs. Weldon and, while abroad, will look over the paper situation. George W. Pauline, managing director of Ritchie & Ramsay, coated paper manufacturers, Toronto, will shortly depart on a trip to the Old Country and will spend some time amid the scenes of his boyhood.

Transfer of Pulp Wood Concessions

The Long Lake pulp and timber limit which was awarded by tender to J. H. Black, 36 Toronto Street, by the Ontario Department of Lands and Forests, in July 1921, and upon which before April 1922, he was to establish a pulp mill, situated at some point in the district of Thunder Bay, and equip it, was recently transferred by Mr. Black to Lewis L. Alsted, of Appleton, Wisconsin. Mr. Alsted has taken over the responsibility of carrying out the necessary work and has now all the right, title and interest in the limit formerly held by Mr. Black. Mr. Alsted is the principal man behind the projected mill of the Great Lakes Pulp & Paper Company, at Port Arthur.

On June 15, 1921, the Nagagami River pulp and timber limit was awarded by the Ontaria Government to the Transcontinental Development Company, Limited, 85 Bay Street, Toronto. Afterwards the company's name was changed to that of the Transcontinental Paper Company. The original holders under the conditions of sale were required to begin construction on a pulp mill and carry out certain other regulations by October 3, 1921. The Department of Lands and Forests states that owing to the inability of the holders to locate a suitable waterpower on the limit, a further extension of time is being sought in the hope that negotiations may be had with the Hydro-Electric Commission that will result in a satisfactory solution of the power problem now apparently confronting the company obligated to develop the area.

New Pulpwood Unloading Equipment

The Howard Smith Paper Mills, are making extensive additions to their plant at Cornwall. A new finishing room and an addition to the machine room will be built which will increase the capacity of the mill by about 50 per cent. It will be remembered that some time ago the company acquired splendid pulpwood limits in the Gaspe Peninsula, and will bring their pulpwood up the St. Lawrence in barges to Cornwall. There a new wharf has been completed for the rapid transfer of the cargoes. A new unloading and conveying equipment is being installed. They consist of two, 5-ton derricks operated by two 8 x 12 double drum hoists and a 75 h. p. vertical boiler for unloading rossed wood from boats, while a system of piling out and storage conveyors has also been built.

Interests Aqquired By Veteran Officers

The interests of Mrs. Ritchie, wife of the late F. A. Richie, head of the firm of Ritchie & Ramsay, coated paper manufacturers, Toronto, have been acquired by George W. Pauline, managing director of the firm, and John M. Finlay, secretary-treasurer. Mr. Pauline has been with the organization for the last eighteen years and Mr. Finlay for twenty one and both are well known and highly esteemed in the trade. There will be no change in the name or policy of the firm and the same high grade papers will be turned out as during the past thirty years. The company is very busy at the present time.

Notes and Jottings of the Trade

Three hundred bales of waste paper aggregating about one hundred and twenty five tons were destroyed by fire recently in the yard of the Belleville Paper Mills at Belleville. The mill escaped damage.

John Martin, of Winnipeg, former head of the Canadian Paper Trade Association, and one of the most widely known paper jobbers in Canada, is spending a few days in Toronto.

A. R. McRæ, representing the Dominion Paper Company, Limited, Montreal, was a caller upon the trade in Toronto during the last week. He was formerly connected with the Victorio Paper and Twine Co.

Mrs. Jones, wife of Col. C. H. L. Jones, of Sault St. Marie, general manager of the Spanish River Pulp and Paper Mills, was struck by an automobile driven by a fourteen year old boy and dragged some distance. She was seriously injured.

The Woodstock Paper Box Company, of Woodstock, Ont., which is a branch of the Galt Paper Box Company, Galt, Ont., will erect a large addition in order to take care of increasing business.

J. L. McNicol, widely known in Canadian paper circles and ex-assistant news print controller for Canada, who left a year ago for Siam, to take charge of experimental work in the paper making line for the government, reports that good progress is being made. He has made his first cook of rag stock at Bangkok.

BIRD SCREENS

The working qualities of a BIRD SCREEN were recently summed up by a paper mill superintendent as follows:

> **"The greatest advantage we find is the elimination of lumps and the necessity of washing up our machine. I personally figure that we save in production at least five tons a week on a 110 inch machine, because we do not have to shut down and wash-up. Also, a great many of our breaks have been eliminated which were caused by lumps from the screen. There is very little expense in keeping up your screen. . . ."**

We shall be glad to send you a BIRD SCREEN catalog.

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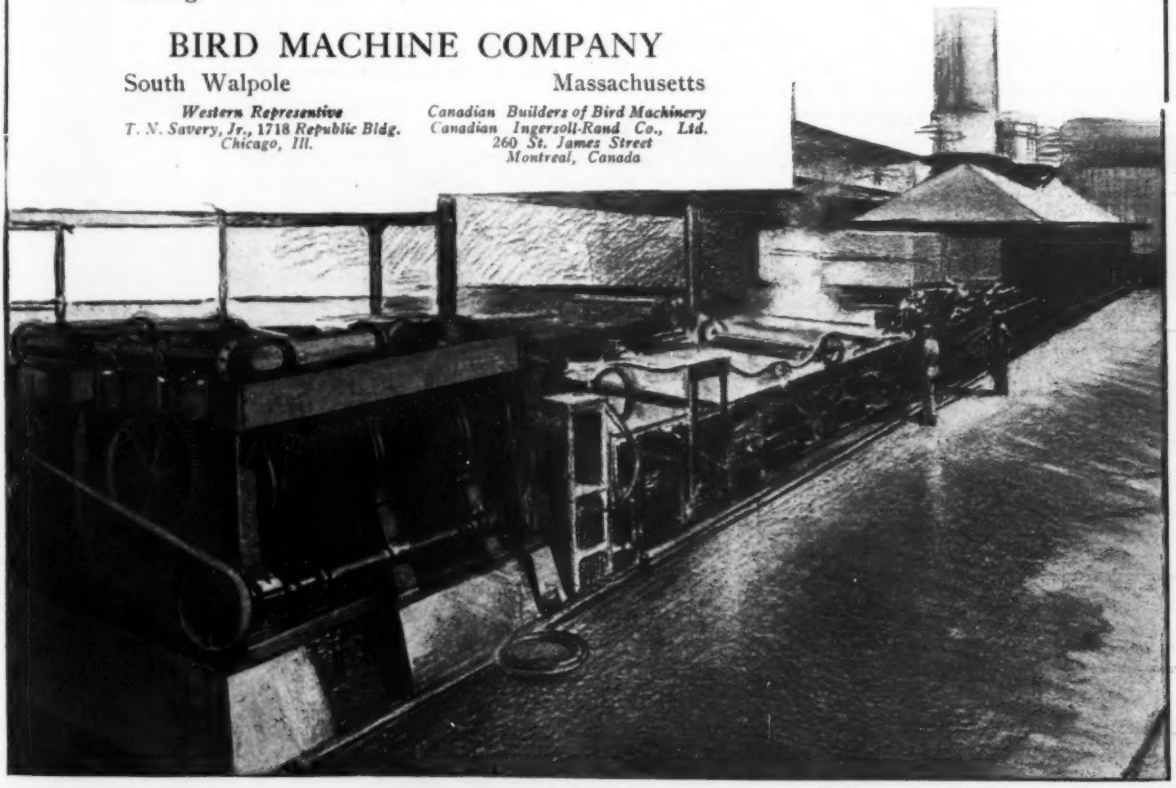


12,000 Tons of Paper pass through Bird Screens Daily

5161

UNIVERSITY OF MICHIGAN ADDS RESEARCH SERVICE

Will be Conducted for the Benefit of the Superintendents of the Paper Mills of Michigan and Will, It Is Believed, Interest More Students in the Manufacture of Paper and Give a Larger Supply of Trained Men to the Industry in the Future—To Move Business of Lignistra Fiber Co. from Barberton, Ohio, to Monroe—Change in Office of Superintendents National Secretary.

[FROM OUR REGULAR CORRESPONDENT.]

KALAMAZOO, Mich, June 25, 1923.—A central service and research department for the paper mills of Michigan and especially for the benefit of that industry in this state is now assured by the University of Michigan. Prof. A. E. White, of the Industries Research department, has canvassed the paper companies of Michigan and met with sufficient assurance of support to announce the proposition a certainty. The plan has met with favor among the mills of the Kalamazoo valley, also at Monroe, Muskegon, Niles and other points where the idea has been explained.

Prof. Hayward has been secured to handle engineering problems that may arise in the various mills and will be prepared to make technical surveys looking to greater efficiency in the various plants.

At the present time Prof. Hayward is making an exhaustive survey of the plant of the Kalamazoo Vegetable Parchment Company, preparatory to submitting a report on the general condition and efficiency of that mill.

Monroe Adds Another Industry

Monroe, Michigan's second paper city and first in the standpoint of making board, is adding another industry to the many successful ones in that line. The Monroe Board and Lining Company has taken over the business of the Lignistra Fiber Company, Barberton, Ohio, and is moving the concern to Monroe. The new company has an authorized capital of $150,000, of which $75,000 has been paid in. The officers are: President, William C. Guttmann; vice president and treasurer, J. D. Miller; secretary, Fred J. Motz. An extensive line of paper products will be manufactured.

The first building of the plant will be 200 by 300 feet in dimensions and will be laid out so that other units can be added as required. About 40 men will be employed at the outset. Two other building projects in the paper mill line are the rebuilding of the burned portions of the Monroe Paper Company, manufacturers of corrugated lining and box board and the new carton plant of the Monroe Paper Products Company. Both structures are enclosed and machinery is being rapidly installed. They should be in production in the immediate future.

A Big Paper Board Town

J. W. Beckman, associate editor of the *Michigan Manufacturer and Financial Record*, in a recent issue of his journal, covered the industries of Monroe, pointing out that with a population of 12,000, the factories in the city gave employment to 4,000 hands. Special reference was made to the importance of the Consolidated Paper Company and the River Raisin Paper Company. He said:

"The plants of the Consolidated Paper Company have a total floor space of 1,882,000 square feet. They employ 1,700 people in the factories and 55 in the offices. The daily production is 450 tons of box board and container board, 90 tons of binder board are used for bookbinding. Three hundred tons of paper are used daily in making folding boxes, corrugated and solid fiber shipping cases.

"The Consolidated has a capitalization of $7,000,000, $5,000,000 of which is common and $2,000,000 preferred. Branch offices are in New York, Chicago, Buffalo, Kansas City, Cleveland, Boston, Philadelphia, Baltimore, Pittsburgh and Indianapolis. This concern also has a board mill at Aurora, Ill.

"The River Raisin Paper Company, with a floor space of 22 acres, employs 1,200 people and produces daily 325 tons of fiber board for use in solid fiber boxes and corrugated shipping cases; 45 tons of corrugated straw board; 75 tons silicate of soda, and more than 400,000 shipping cases."

Resigns from Bryant Paper Co.

William Allen, Allen boulevard, has resigned as assistant secretary of the Bryant Paper Company and plans to open an accountant's office here. He will do general work. Mr. Allen is an expert in tax matters and will specialize along that line.

Secretary Massey Visits Kalamazoo

Peter J. Massey, secretary-treasurer of the American Pulp and Paper Mill Superintendents' Association, was in Kalamazoo, Sunday, checking up the secretary's office here, preparatory to transferring it from Miss Pearl C. Barrett, resigned, to Ed. T. A. Coughlin, recently appointed as assistant to Mr. Massey. The office will not be closed as first intimated, but will be run as formerly in the McNair building. Mr. Coughlin is district vice president of the international organization and very active in the affairs and deliberations of the parent organization.

Miss Barrett was appointed as secretary by J. H. O'Connell, during his presidency of the association. She carried on all the detail work in connection with the 1922 and 1923 conventions, handling a vast amount of correspondence creditably.

Reequipping Superior Division

The first step taken by the Bryant Paper Company in the reequipment of the Superior division, the installation of new machinery and new departments, occurred the past week when Felix Pagenstecher, president of the company, awarded to Raymond D. Boyer the contract for the new converting plant. This structure is to be of concrete and steel, three stories high and 46 by 160 feet in dimensions. It will be located immediately south of the present mill and will cost approximately $40,000, the equipment being extra.

"With the completion of this conversion plant we will be able to put into effect a system of converting waste papers that we have worked out at considerable expense over a period of two years experimenting," said President Pagenstecher. "We believe it is an improvement over old methods and will enable us to do away with several departments in the old mill. We will also rebuild our heater room and completely overhaul and enlarge the two machines, at the same time using electric power in propelling all machinery."

The improvements inaugurated at the Superior mill are part of the plan outlined by Engineer V. D. Simons, of Chicago, and included in program No. 1. Mr. Pagenstecher explained that it is provided in the general reconstruction program to maintain the Superior as an individual and separate unit from the Bryant, Imperial and Milham divisions and that it will be operated as such.

Work is progressing rapidly on the new power plant. Two of the four boilers have been hooked up and tested out and work splendidly. A 2,000 k.w. uniflow engine, built by the Nordberg Engine Company, Milwaukee, is now being installed. This giant power unit required five cars for shipment to Kalamazoo. One piece alone weighed 69,000 pounds. In addition there will be a small turbine. When this power plant is completed, it will permit the scrapping of four boiler houses, carrying 24 boilers, and result in a remarkable saving in power production costs. Water for the boilers will be taken from the artificial pond and a new concrete intake and screen is now being installed. This will prevent sliming, as was the case when piping was used.

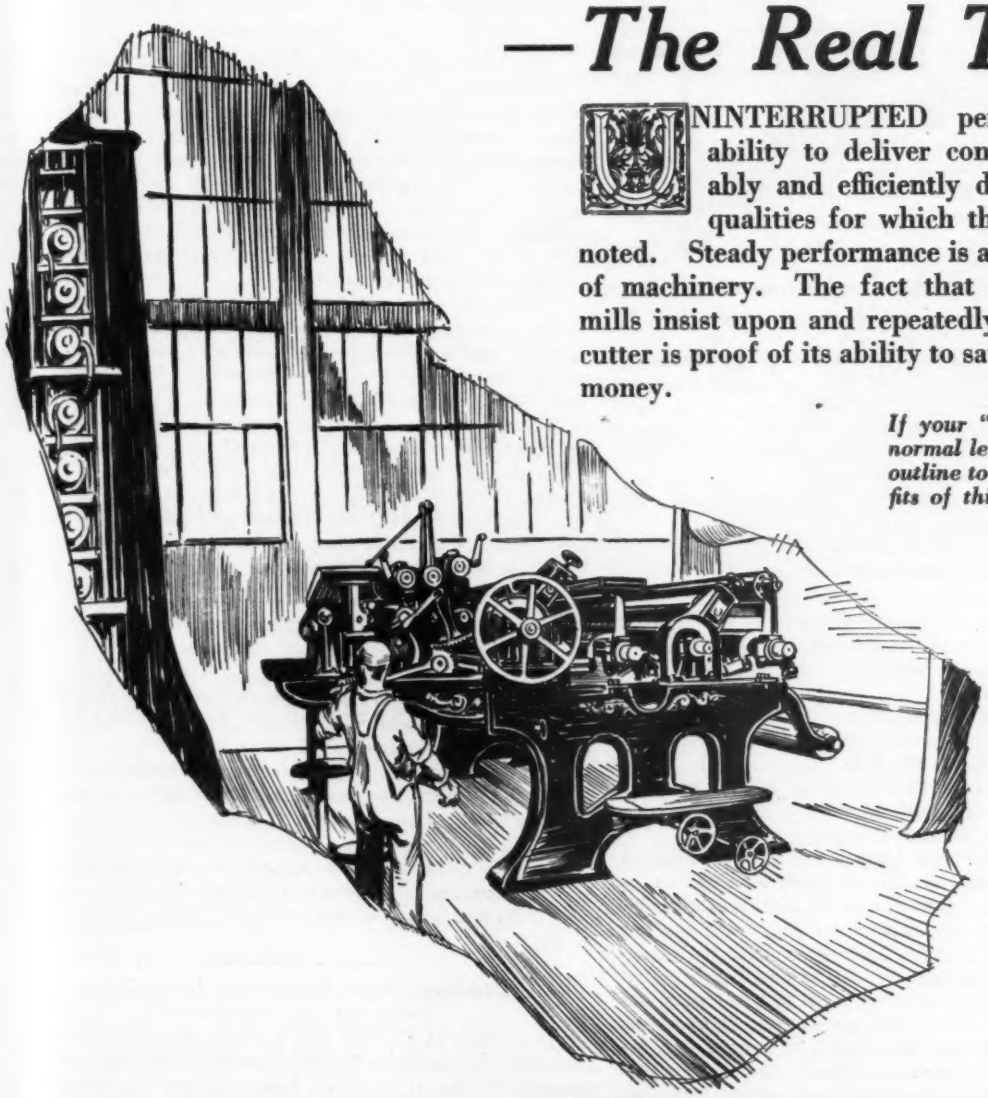
General News of the Trade

Alex G. Gilman, president of the Allied Paper Mills has returned from a business trip to New York City and Washington. While in the latter city he attended a meeting of the Advisory Com-

(*Continued on page* 34)

BELOIT IRON WORKS PAPER MACH'Y BELOIT WIS

Performance —The Real Test



UNINTERRUPTED performance — the ability to deliver consistently, dependably and efficiently day after day, are qualities for which the Beloit cutter is noted. Steady performance is always the real test of machinery. The fact that prominent board mills insist upon and repeatedly order the Beloit cutter is proof of its ability to save time, labor and money.

If your "broke" losses are abnormal let Beloit mill engineers outline to you the unusual benefits of this superior cutter.

Beloit Iron Works BELOIT IRON WORKS PAPER MACH'Y BELOIT WIS **Beloit, Wis., U. S. A.**

Obituary

E. C. Palmer

NEW ORLEANS, La., June 21, 1923.—E. C. Palmer, head of E. C. Palmer & Co., Ltd., wholesale paper merchants, died Sunday morning, June 17, after an illness lasting seven months.

Mr. Palmer was born in Wareham, September 18, 1865. He entered Harvard University in 1883, completing his course in 1887. Mr. Palmer choose railroading as his first vocation, his first position being with the freight tariff department of the C. B. & Q. railroad in Chicago. He was rapidly promoted to chief rate clerk.

In 1893 Mr. Palmer left the C. B. & Q. to become assistant general freight agent of the Iowa Central Railroad at Marshalltown, Iowa, and soon became general freight agent. At the time Mr Palmer probably was the youngest man in the country holding an official position of that character.

Circumstances, however, soon compelled him to give up his railroad career and make his home in the South, as his father, who had built up a wholesale paper business in New Orleans, died in 1895, leaving the family finances practically all invested in this business, so that young Palmer felt it incumbent upon himself to come to New Orleans and look after the enterprise. Like everything else he undertook, Mr. Palmer entered into it with all there was in him, learning the business from the ground up and at his death the business had grown twenty-fold during his charge.

Mr. Palmer was a capable merchant and a strong advocate of the "square deal" policy which resulted in the steady growth of the firm's business which today covers the entire South with two branch houses in Texas, one in Houston since 1912, and the other in Dallas since 1917. One thing uppermost in Mr. Palmer's mind was the happiness and welfare of those associated with him, and he built about him an organization that was the personification of loyalty.

Mr. Palmer was a member of the Harvard Club of New Orleans. He was also affiliated with several other clubs and organizations. He took an active part in all charitable movements and was a generous contributor to nearly all appeals made to him. He was a home man and devoted much of his time to reading. Mr. Palmer is survived by a daughter, Miss Helen Palmer, of New Orleans, and two sisters, Misses Maude and Marguerite Palmer, of Wareham, Mass.

Leslie W. May

Leslie W. May, treasurer of Geo. W. Millar & Co., Inc., paper merchants, 284-288 Lafayette street, New York, died at his home in Bronxville, N. Y., June 10, aged 43 years.

Mr. May had been in the paper business with Geo. W. Millar & Co. about twenty-five years. In March, 1900, Mr. William D. May, Sr., William D. May, Jr., and Leslie W. May, bought out the interest of Geo. W. Millar and continued the partnership until the business was incorporated on April 12, 1919, at which time Leslie W. May became treasurer of Geo. W. Millar & Co., Inc.

He has been active in the business up to the past two years, and was well known. About three years ago, on account of having tuberculosis, he went to Saranac where he spent about a year, being treated. His case was pronounced arrested. He, however, was taken to his bed about a year ago and had been confined there ever since.

ADDS RESEARCH BUREAU

(*Continued from page* 32)

mittee, Bureau of Paper Standards, Department of Commerce, which is considering the standardization of paper.

The export business of the Kalamazoo Vegetable Parchment Company is growing by leaps and bounds. During the past week large shipments were made to China, India, Porto Rico, Honduras and Columbia.

J. B. Faulkner, 72 years of age, father of Mrs. Jacob Kindleberger, wife of the head of the Kalamazoo Vegetable Parchment Company, died June 16. The remains were taken to Wilmington, Ohio, for interment.

Mrs. John F. King, widow of the late John F. King and mother of Merrill B. King, president of the Rex Paper company, died Thursday morning as the result of a serious operation. She was 60 years of age and apparently in the best of health until very recently. In addition to her son, she leaves a daughter, Mrs. Harry H. Creamer, of Minneapolis. Mrs. King was a director in the Rex Paper Company at the time of her death. During the latter years of her life she was actively interested in charitable works.

Canada's Heavy News Print Exports

A special report issued by the Canadian Pulp and Paper Association states that the exports of news print for the month of May amounted to 98,901 tons compared with 78,378 tons in the previous month. While this figure does not constitute a new record, it is the highest yet recorded with the exception of the month of March, when the total exports were 113,450 tons.

Of the 98,901 tons exported in May 98,531 tons was sent to the United States and only 370 tons to other countries, New Zealand taking 343 tons of this amount.

The first five months of this year have witnessed a large increase in our news print exports over the corresponding period of the last two years. The following table gives the figures for the present year, 1921 and 1922: Five months, 1923, 457,913 tons; 1922, 370,861 tons, and 1921, 277,571 tons.

This year's figures show an increase over last year of 87,052 tons, or 23 per cent, and over 1921 of 180,342 tons, or 65 per cent.

Of the total exports in the five months' period the quantities shipped to the United States were as follows: Five months, 1923, 446,713 tons; 1922, 345,647 tons, and 1921, 252,794 tons.

Shipments to countries other than the United States were much smaller in proportion to the total this year than in either 1922 or 1921.

Finland's Paper Exports Increase

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 20, 1923.—The Paper Division of the Department of Commerce has received the following report from American Consul Davis, at Helsingfors, regarding Finland's paper export for the first quarter of this year:

"The total exports of paper during the first quarter of this year amounted to 43,423 tons, compared with 40,687 tons during the same period last year, and those of cardboard to 6,039 tons compared with 3,652 tons during the first three months of 1922.

Exports of mechanical pulp amounted to 9,349 tons, of sulphite to 35,978 tons, and of sulphate to 14,382 tons, compared with 6,498 tons, 19,551 tons, and 5,747 tons, respectively, during the first quarter of 1922."

American Paper Imports to Lima Grow

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., June 20, 1923.—The Paper Division of the Department of Commerce has the following report from American Consul C. E. Guyant at Callao, Lima, regarding paper imports in Lima:

"American exports recovered strongly in the paper market during March. Arrivals during February were chiefly from German exporters acting as agents for Norwegian and Swedish mills, the American shipments amounting to only 278 cases out of a total importation of 2,326 cases. During March, in a quieter market, 720 cases came from the United States, 691 from Germany and 29 from England, the total imports amounting to 1,440 cases."

How

To Speed Up Your Paper Machine—

Without Pitching the Wire

It is now possible to feed stock directly to the wire of a fourdrinier paper machine at any speed desired, without resorting to the expensive process of pitching the wire.

The device that performs this important function also eliminates slices, prevents the wear caused by slices, and makes possible accurate and fine adjustments assuring a sheet of uniform thickness.

The new device is the Voith High Pressure Stock Inlet. We have for you an interesting pamphlet, fully illustrated, describing it in detail. Write for your copy today.

VALLEY IRON WORKS CO.

Plant
APPLETON, WIS.

New York Office
350 MADISON AVE.

New York Trade Jottings

O. L. Berger, of the G. D. Jenssen Company, 200 Fifth avenue, New York, returned Saturday from a trip to Montreal.

* * *

The Manitou Paper Company, 250 West Fifty-seventh street, has filed notice with the Secretary of State at Albany, N. Y., of an increase in its capital stock from $50,000 to $100,000.

* * *

The Waste Material Trading Corporation, 135 Broadway, has announced that J. J. Patricof is no longer connected with it. William Wacht will take his place as president of the company.

* * *

Herman W. Ahrens, formerly of the Emanuel Salomon Company, has joined the staff of Stone Bros. & Victor Galaup, 155 Spring street. He will represent the company among the paper mills in the Eastern territory.

* * *

George Krueger, who for thirty-six years has been connected with Henry Lindenmeyer and Sons, 32 Bleecker street, has left them to take a position on the sales force of the Pohlman Paper Company, Gold street. He began his new duties last Monday.

* * *

John Matthews, Jr., chief of the Paper Division of the Department of Commerce, is being congratulated upon the birth of a girl Sunday. Mrs. Matthews was formerly Miss Dorra Randolph Moore, daughter of Judge Charles H. Moore, well known to the paper trade.

* * *

Harry Becker, member of the House of Commons, and son of Sir Frederick Becker, head of the Becker Wood Pulp of America, Inc., was sponsor for the bill introduced in Parliament complaining against the restrictions placed on English visitors to this country and their detention at Ellis Island.

* * *

Charles F. Hubbs & Co., paper merchants, 389 Lafayette street, held their thirteenth annual outing and field day Saturday, June 9, at Ulmer Park. Before departing for home a rising vote of thanks was extended to the committee, headed by F. E. Hight and assisted by G. C. Kerdy, J. J. Mahoney, H. B. Aschoff and H. J. McCann, for making the whole day a huge success.

* * *

Joseph Stein, president and treasurer of the Yorkville Paper Company, of New York City, since its corporation in 1903, and a member of the concern for more than forty years, has left the city for a two months' sojourn through the West and Canada. Homeward bound, he and his party will call on the several paper mills in the Lake region.

* * *

Robert B. Beatty, of Whiting-Patterson Paper Company, New York City, was married on June 18 to Miss Helen McLeod, daughter of Mrs. Thomas J. McLeod, of Montclair, N. J. The groom is a son of George W. Beatty, of Wilkinson Brothers & Co., New York, and a brother of Hayward Beatty, of the American Writing Paper Company, Philadelphia. The best man was Ellwood H. Wilson, of Henry T. Lutz Printing House, New York City.

* * *

Union Bag and Paper Corporation earnings for the first six months of this year are estimated to be running at an annual rate of better than $12 a share on the 149,778 shares of capital stock, says *New York Financial American*. This would be equivalent to net profits available for dividends of approximately $1,800,000, compared with $909,864 for the 1922 year equal to $6.29 a share and $383,753 in 1921 or $2.64 a share. The ability of Union Bag to show these earnings is not surprising in view of the fact that when conditions in the paper trade were normal (1917 and 1918) net profits after charges and available for dividends were slightly above the $2,000,000 mark. Another factor is that practically for all of the first half of this year mills were operating at capacity.

* * *

Paper box merchants and manufacturers will be the guests of Herman M. Hess, of Hess and Densen, at a dinner meeting in behalf of the Federation for the Support of Jewish Philanthropic Societies to be given Monday evening, June 25, at the Metropolis Club, 105 West Fifty-seventh street. Mr. Hess will be host to fourteen leading Jewish paper box manufacturers of New York, who will discuss the drive for $500,000 which is being conducted by the Business Men's Council to destroy the deficit in the federation's 1923 budget of four and a half million dollars. The drive is being organized on trade lines, each industry comprising a unit. More than one hundred trades have formed committees. Mr. Hess is chairman of the paper box group which has pledged to raise $1,500 before the end of the year. Members of his committee are J. J. Dix, of Dix & Co.; Richard A. Guinzburg, of the Gem Paper Box Company; Emanuel Allmayer, of Loeb Allmayer and Redlich; David Hefler, of Hefler Company, Inc., and Harry Kovner, of the Hygrade Corrugated Paper Products Corporation.

News of the Boston Trade

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., June 27, 1923.—Many Boston friends of Edward A. Westfall, publisher of the Boston American, tendered him a hearty farewell reception recently, upon the occasion of his departure from New York, where he will enter into partnership with the firm of H. G. Craig & Co. He was presented with a gold watch and an engrossed testimonial of esteem by his associates on the Hearst newspapers of Boston. The presentation was made by J. F. Cullen, assistant treasurer of the *American*, in the presence of representatives from every department of the Hearst papers. His Boston friends joined in wishing him the best of luck in his new undertaking.

Marlboro citizens recently had the pleasure of listening to an entertaining address by William Dudley, a native of Marlboro, and now president of the Dudley Paper Company of Lansing, Mich. Mr. Dudley was the speaker at a noon-day luncheon of the Marlboro Rotary Club. He was well known as an athlete here before he departed for the West a quarter of a century ago.

The Great Northern Paper Company is said to be behind a big reforestration project now being undertaken in Searsport, Me., on the east side of Mortland road, extending from the woods on the crest of Long Hill to the Elden Harriman property in the village. For several days recently a large crew of men under the direction of a forestry expert from the University of Maine was engaged in the work of planting a fine forest on the tract. About 12,000 tiny pine trees only a few inches in height were set out at a distance of four feet apart each way on the land, which slopes southward toward the bay.

English China Clays Brochure

One of the most attractive brochures ever issued in the paper and pulp industry is that of the English China Clays, Ltd., which with profuse illustrations gives a detailed history of the firm as well as showing the mines owned by the company and also in detail the process of clay production.

It is a very expensive work and should be highly prized by all those fortunate to receive a copy.

The American representative of the Company is the English China Clays Sales Corporation, 33 West 42nd Street, New York City.

RESULTS!

Results count.

Westinghouse Sectional Paper Machine Drive has been in use long enough for operating results to substantiate our early claims.

High production efficiency, low maintenance and improved mill conditions have been obtained—in every instance.

Our nearest district office will be glad to explain in detail the advantages of this new and improved drive.

Westinghouse
Electric & Manufacturing Company
East Pittsburgh, Pa.
Sales Offices in All Principal
American Cities

Westinghouse

PAPER AND PAPER STOCKS IMPORTS AND EXPORTS OF THE UNITED STATES

For the Month Ending March 31, 1923, and for the Nine Months Ended March 31, 1923, as Compared with Corresponding Months of Two Previous Years

IMPORTS—PAPER.

Paper and Manufacturers of		March 1922 Quantity	March 1922 Value	March 1923 Quantity	March 1923 Value	Nine Months Ended March 31 1922 Quantity	Nine Months Ended March 31 1922 Value	Nine Months Ended March 31 1923 Quantity	Nine Months Ended March 31 1923 Value
Paper, except printed matter (total)		.....	$6,605,112	.....	$9,742,629	.....	$61,042,227	.....	$72,753,352
Printing papers—									
Standard newsprint	lbs.. Free	156,062,992	$5,455,889	224,680,385	$8,334,836	1,370,084,529	$54,558,188	1,704,259,684	$61,236,241
All other, n. e. s.	lbs.. Dut.	19,600	2,267	701,519	39,910	296,517	41,400	7,362,596	419,416
Grease proof and waterproof papers	lbs.. Dut.	.....	.....	166,755	18,289	.....	.....	[1]1,169,805	[1]108,263
Wrapping paper	lbs.. Dut.	3,982,203	145,743	6,287,607	278,332	14,813,569	562,116	63,167,537	2,787,869
Writing, drawing, bond, etc	lbs.. Dut.	.....	.....	203,532	51,860	.....	.....	[1]1,413,065	[1]341,330
Surface coated	lbs.. Dut.	101,685	21,677	90,416	24,454	534,792	117,803	741,914	202,438
Tissue papers	lbs.. Dut.	.....	.....	194,976	72,946	.....	.....	[1]1,018,911	[1]409,686
Paper boards—									
Pulp boards in rolls	lbs.. Dut.	8,516,367	228,345	7,733,720	228,729	31,463,810	839,785	44,787,348	1,147,054
Other paper boards, n. e. s.	lbs.. Dut.	.....	.....	1,520,796	42,604	.....	.....	[1]12,330,648	[1]346,739
Cigarette paper, cigarette books and covers	lbs.. Dut.	.....	342,722	1,062,583	245,476	.....	2,319,219	.....	2,658,862
Photographic paper	lbs.. Dut.	317,638	54,728	186,584	46,221	1,706,987	278,878	1,856,936	391,095
Hanging paper	lbs.. Dut.	.....	63,228	281,389	43,887	.....	315,992	.....	453,959
Decalcomania, not printed	lbs.. Free	.....	9,719	32,982	10,209	.....	69,144	.....	73,327
All other	lbs.. Dut.	.....	280,794	.....	304,876	.....	1,939,702	.....	2,177,073
CRUDE PAPER STOCK									
Rags for paper stock	lbs.. Free	20,372,471	331,526	29,125,727	562,427	149,242,012	2,227,530	257,530,214	4,300,725
Waste bagging, waste paper, etc.	lbs.. Free	.....	.....	17,704,162	250,873	.....	.....	[1]87,368,704	[1]1,122,740
Old rope and all other paper stock	lbs.. Free	10,671,795	259,189	9,161,114	420,519	104,549,056	2,248,790	107,124,116	3,497,771
WOOD PULP									
Mechanically ground	tons.. Free	11,094	296,035	22,449	788,861	171,935	4,485,762	195,829	6,224,298
Chemical—									
Sulphite, unbleached	tons.. Free	17,994	952,139	31,251	1,744,708	244,053	13,735,528	403,573	20,437,887
Sulphite, bleached	tons.. Free	12,034	1,108,642	25,153	2,220,184	101,748	8,819,709	193,689	16,374,076
Total	tons.. Free	30,028	2,060,781	56,404	3,964,892	345,801	22,555,237	597,262	36,811,963
Imported from—									
Finland	tons	.....	.....	9,977	646,418	.....	.....	44,216	2,349,864
Norway	tons	.....	.....	7,668	571,238	.....	.....	58,557	4,071,878
Sweden	tons	.....	.....	7,467	447,308	.....	.....	241,425	13,195,408
Canada	tons	.....	.....	25,285	1,886,011	.....	.....	229,987	15,755,889
Other countries	tons	.....	.....	6,007	413,917	.....	.....	23,077	1,438,924
Soda pulp	tons.. Free	.....	.....	.....	.....	.....	.....	[1]1,066	[1]67,492
Sulphate pulp, unbleached	tons.. Free	12,989	850,459	16,497	1,096,761	169,549	10,205,777	214,375	12,610,403
Imported from—									
Finland	tons	.....	.....	197	12,731	.....	.....	9,750	481,632
Norway	tons	.....	.....	1,004	61,677	.....	.....	7,073	382,367
Sweden	tons	.....	.....	2,928	172,464	.....	.....	92,418	4,850,509
Canada	tons	.....	.....	12,368	849,889	.....	.....	104,474	6,858,893
Other countries	tons	.....	.....	.....	.....	.....	.....	660	37,011
Sulphate pulp, bleached	tons.. Free	176	14,527	383	30,416	4,979	311,743	20,549	1,187,190
Other pulp	tons.. Free	.....	.....	.....	10	.....	.....	[1]683	[1]19,520
CHEMICAL AND OTHER PAPER MAKERS' MATERIALS									
Color lakes	tons.. Dut.	.....	.....	1,840	2,392	.....	.....	[2]2,079	[2]2,654
Indigo—									
Natural	tons.. Dut.	.....	.....	3,414	1,414	20,619	26,626	14,001	13,769
Synthetic	tons.. Dut.	16,726	38,345	.....	.....	429,918	262,494	14,257	12,584
Dyes, colors, stains, etc.	tons.. Dut.	.....	.....	3,187	5,726	.....	.....	[1]4,153	[1]7,325
Colors or dyes, n. e. s.	tons.. Dut.	301,214	378,863	.....	.....	2,495,452	3,541,066	[2]832,001	[2]1,408,192
Colors, dyes, stains, color acids, and color bases, n. e. s.	tons.. Dut.	.....	.....	318,950	416,469	.....	.....	[1]1,730,134	[1]2,311,617
Imported from—									
Germany	tons	.....	.....	200,817	231,358	.....	.....	.....	.....
Switzerland	tons	.....	.....	45,866	78,669	.....	.....	.....	.....
United Kingdom	tons	.....	.....	8,676	8,992	.....	.....	.....	.....
Other countries	tons	.....	.....	63,591	97,450	.....	.....	.....	.....
Casein or lactarene	tons.. Free	170,524	74,962	.....	.....	7,488,837	472,682	[1]3,288,534	[1]346,431
	tons.. Dut.	.....	.....	3,010,252	643,354	.....	.....	[1]13,215,281	[1]2,133,536
Kaolin, china, and paper clay	tons.. Dut.	13,085	140,215	22,706	253,132	129,025	1,333,521	236,481	2,542,964
PULPWOOD.									
Rough	cu. ft.. Free	11,986	123,706	29,578	204,581	124,635	1,499,571	237,505	2,221,196
Peeled	cu. ft.. Free	66,098	684,498	52,748	523,645	420,165	4,626,276	538,468	5,294,412
Rossed	cu. ft.. Free	4,325	53,148	5,046	54,082	52,581	801,330	100,023	1,357,285

[1] Beginning Sept. 22. [2] July 1 to Sept. 21.

(*Continued on page* 40)

Established 1886

Faith

The ever-recurring names of the largest paper mills on our contract records from year to year are evidence of the implicit faith of these firms in our ability to serve them in the most reliable, responsible and efficient manner.

Our organization, trained to the minute in every respect, is the bulwark of their faith.

M. GOTTESMAN & COMPANY

—INCORPORATED—

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U. S. A.

European Offices:
Stureplan 13,
Stockholm, Sweden

P.S. Our new telephone number is Vanderbilt 4600

PAPER AND PAPER STOCKS IMPORTS AND EXPORTS OF THE UNITED STATES

(*Continued from page 38*)

EXPORTS—PAPER.

Paper and Manufactures of	March 1922 Quantity	March 1922 Value	March 1923 Quantity	March 1923 Value	Nine Months Ended March 31 1922 Quantity	Nine Months Ended March 31 1922 Value	Nine Months Ended March 31 1923 Quantity	Nine Months Ended March 31 1923 Value
Paper, except printed matter (total)	.....	$2,074,087	.....	$2,324,928	.....	$14,211,182	.....	$18,560,024
Printing Paper—								
News Print ..... lbs.	5,585,364	$246,227	3,978,361	[1]$189,827	26,288,180	$1,248,996	30,051,731	$1,431,782
Exported to—								
Canada	217,221	$15,954	73,537	$7,100	480,538	$34,537	1,429,733	$91,056
Central America	58,126	3,011	146,149	7,615	1,578,022	88,111	1,213,537	65,959
Cuba	1,362,443	56,904	2,931,623	128,396	12,116,760	551,741	15,828,026	682,689
Argentina	2,103,185	82,056	.....	.....	4,963,354	195,350	2,274,830	91,120
Other South America	551,242	30,067	214,575	11,510	2,064,036	111,034	3,017,576	155,168
China	505,355	18,206	1,928	89	899,976	37,012	434,044	18,490
Japan	.....	.....	.....	.....	.....	.....	594,388	41,407
Philippine Islands	539,892	25,795	384,401	18,851	2,489,335	127,006	3,692,268	178,837
Other countries	247,900	14,234	226,148	16,266	1,696,159	104,205	1,567,329	106,961
Book paper, not coated ..... lbs.	1,720,412	$185,041	2,383,962	$266,443	14,201,570	$1,587,431	22,741,515	$2,278,184
Exported to—								
United Kingdom	29,570	$5,942	47,568	$10,879	283,766	$55,906	477,678	$101,517
Canada	207,118	32,164	338,910	41,043	2,018,248	240,418	2,133,662	240,373
Central America	57,856	6,698	40,171	5,668	453,273	63,665	381,317	43,241
Mexico	177,508	16,740	228,792	23,675	2,279,496	260,052	1,995,384	181,543
Cuba	395,975	42,853	704,918	76,521	1,783,646	185,224	5,445,260	548,823
Argentina	.....	.....	141,757	15,597	261,329	36,028	1,482,426	141,450
Brazil	90,405	12,443	129,494	14,531	437,911	67,218	1,234,036	132,725
Venezuela	49,573	4,860	14,274	1,703	461,833	54,758	465,350	51,860
Other South America	98,967	10,625	116,190	11,223	707,291	73,198	1,340,961	129,044
British India	22,054	2,608	63,702	6,357	417,644	41,405	199,820	22,547
China	65,581	4,866	90,667	11,021	1,166,563	117,509	1,014,696	96,681
Japan	303,112	21,632	85,267	6,885	1,793,429	162,762	2,017,878	157,065
Philippine Islands	91,146	10,548	254,059	22,649	902,726	98,635	3,082,562	273,037
Australia	65,257	5,998	85,089	12,802	501,553	49,582	725,266	80,799
Other countries	66,290	7,064	43,104	5,889	732,862	81,071	735,219	77,480
Cover coated ..... lbs.	100,148	$16,319	110,802	$18,061	[2]290,088	[2]$44,898	1,172,766	$163,452
Grease-proof and waterproof paper ..... lbs.	99,408	12,755	178,358	22,471	.....	66,267	1,037,799	136,616
Wrapping paper ..... lbs.	.....	.....	.....	.....	[1]11,682,845	[1]777,175	.....	.....
Kraft wrapping ..... lbs.	139,003	11,737	83,675	6,438	[2]265,683	[2]21,418	524,257	41,550
Other wrapping ..... lbs.	3,452,134	191,598	2,468,057	190,742	[2]8,193,681	[2]502,430	21,930,396	1,574,299
Writing paper and envelopes ..... lbs.	.....	.....	.....	.....	.....	[1]1,033,894	.....	.....
Writing paper, except in papeteries ..... lbs.	543,644	98,804	492,584	81,224	[2]1,612,810	[2]276,741	5,533,438	826,259
Surface-coated paper ..... lbs.	305,943	66,039	334,249	56,810	[2]736,186	[2]150,870	2,779,901	412,544
Tissue and toilet paper ..... lbs.	.....	.....	.....	.....	.....	[1]398,118	.....	.....
Tissue and crêpe paper ..... lbs.	208,549	48,910	254,357	64,435	[2]551,914	[2]132,478	2,427,266	630,415
Toilet paper ..... lbs.	425,541	45,700	400,277	46,422	[2]1,015,963	[2]111,911	3,770,576	417,910
Paper towels and napkins ..... lbs.	108,955	15,190	133,691	19,431	.....	110,464	734,434	127,638
Bristols and bristol board ..... lbs.	146,978	15,510	222,360	16,906	[2]263,091	[2]36,200	1,592,751	131,351
Paper board and straw board ..... lbs.	4,096,788	159,667	4,253,288	225,486	.....	1,109,316	35,620,837	1,652,885
Sheathing and building paper ..... lbs.	375,249	17,387	341,233	16,353	[2]995,661	[2]38,578	4,353,311	153,387
Wall board of paper or pulp ..... sq. ft.	1,248,389	44,024	748,777	28,404	.....	274,639	9,203,068	315,480
Cigarette paper and books ..... lbs.	94,182	43,253	60,787	23,162	[2]180,080	[2]79,921	512,929	183,213
Photographic paper ..... lbs.	157,509	126,324	150,409	142,941	[2]399,301	[2]374,183	984,908	1,053,132
Paper hangings (wall paper) ..... yard	2,722,745	64,479	2,704,526	74,054	.....	310,247	14,509,678	339,550
Paper bags ..... lbs.	1,067,134	98,306	677,646	68,656	.....	616,775	7,791,131	709,751
Boxes and cartons ..... lbs.	898,555	58,008	1,138,108	90,237	.....	747,208	6,926,099	670,894
Carbon paper ..... lbs.	71,010	57,606	89,953	67,875	.....	331,436	523,300	411,014
Envelopes ..... lbs.	194,575	38,766	218,375	41,179	[2]569,060	[2]109,803	1,898,260	371,782
Playing cards ..... pack	243,524	38,553	859,571	95,203	.....	287,288	6,742,450	791,078
Cash-register and adding-machine paper ..... lbs.	70,021	6,754	79,203	9,032	.....	81,186	736,966	77,948
Papeteries (writing paper in boxes) ..... lbs.	8,622	3,956	22,525	7,958	[2]40,587	[2]16,685	290,245	103,310
Other paper and paper products, n.e.s. ..... lbs.	2,331,294	363,174	2,765,809	455,178	.....	3,334,626	31,812,234	3,554,600
Books, maps, pictures and other printed matter (total) ..... lbs.	3,754,858	$1,363,713	3,721,682	$1,476,772	.....	$13,263,380	35,084,532	$13,088,388
Books, maps, pictures, etc.	.....	.....	.....	.....	.....	[1]$9,481,915	.....	.....
Books and Pamphlets ..... lbs.	1,737,808	$631,928	1,935,377	$597,288	[2]4,521,327	[2]1,683,189	17,869,566	$6,131,382
Maps and charts ..... lbs.	4,941	8,575	24,277	14,319	[2]32,228	[2]49,720	135,453	126,232
Music in books or sheets ..... lbs.	54,313	38,115	42,031	25,528	[2]114,548	[2]85,067	366,369	254,847
Souvenir post cards ..... lbs.	165,825	21,444	23,164	10,862	[2]522,778	[2]69,370	306,591	141,453
Lithographic printed matter, except pose cards and maps ..... lbs.	183,260	99,424	168,356	172,535	[2]429,175	[2]209,510	1,427,552	1,119,782
Other printed matter ..... lbs.	1,608,711	564,227	1,528,477	656,240	[2]4,773,694	[2]1,684,609	14,979,001	5,314,691

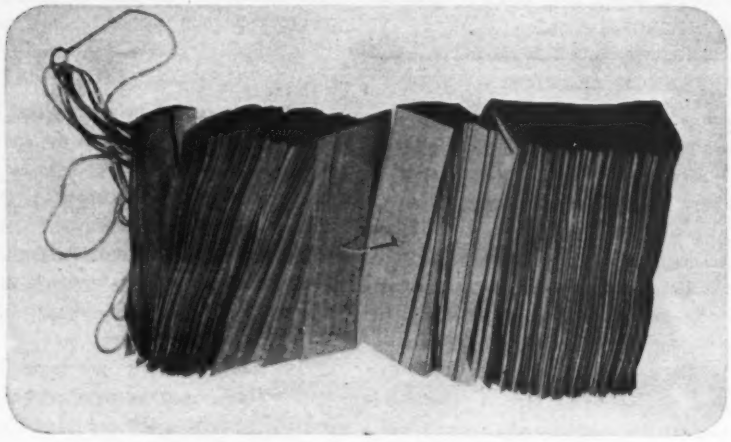
WOOD PULP AND PAPER STOCK.

Sulphite wood pulp ..... tons	1,738	$69,217	1,245	$15,479	[2]5,180	[2]$227,334	11,150	$645,622
Soda wood pulp ..... tons	396	36,427	709	74,953	[2]901	[2]84,860	2,416	213,370
Other wood pulp ..... tons	118	10,102	193	11,530	12,112	642,263	1,816	68,154
Rags, and other paper stock ..... lbs.	11,567,865	167,924	9,097,770	163,338	50,162,339	761,029	47,632,094	936,937

PAPER AND PULP MILL MACHINERY.

Paper and pulp-mill machinery ..... lbs.	653,591	$183,042	2,536,147	$394,390	.....	$2,118,879	9,718,939	$1,496,463

[1]July 1 to Dec. 31, 1921. [2]Jan. 1 to March 31



This prayer book from India is written on strips of palm leaf, held in proper sequence by a cord running through the center of each page.
Erie Museum.

Paper—servant of religion and morality

The human mind demands some set standard of right and wrong. The savage bows down to sticks and stones, knowing no better standard of religious devotion. Civilized man finds morality in a long line of inspired righteousness whose record has been kept and handed on to our generation.

The Hindu with his volume of palm leaf prayers, the Chinese with his tinkling invocations painted on dangling glass, the medieval sculptor who expressed devotion in marble and stone, these felt the need of a vehicle for transmitting their homage of a power higher than they.

Our Bibles, our prayer books and our hymnals take religion from limited localities and make it universal and its benefits broadly available. Morality finds a powerful missionary in the garb of paper.

Hammermill Paper Company
Erie, Pennsylvania

Editorial

Vol. LXXVI New York, June 28, 1923 No. 26
HENRY J. BERGER, Editor

PAPER RESEARCH SERVICE

The interesting announcement is made elsewhere in this issue of the PAPER TRADE JOURNAL of the establishment at the University of Michigan of a Central Service and Research Department for the benefit of the pulp and paper industry of the State of Michigan. Discussing the starting of this new department, Prof. A. E. White, of the Industrial Research Department of the University, said:

"Due to a recent ruling of the Board of Regents it is now possible to have a central service and research organization for the superintendents of the paper mills in Michigan. This organization can render assistance along several different lines. The first type of service can be classed as engineering service. Under this division would come departmental investigations which would measure the exact facts relating to the department, reducing the figures to a cost basis so that it would be possible to show in dollars and cents the loss that exists and it would also include technical plans and recommendations for reducing these losses, showing the cost of equipment and the amount of saving. With this information the superintendent can determine whether or not he wishes to recommend any alterations and can be reasonably sure of the results of any changes that he recommends. The engineering department would also collect data on all the kinds of paper mill equipment in use so that a superintendent would have available more of the facts relating to the machines than he now has. This would include the cost of equipment, the power required to operate, the capacity of the machines and the general results that are accomplished.

"It is also possible to have a complete chemical laboratory in which all of the tests both physical and chemical can be made on the finished product as well as on all of the raw materials which enter into the process. By being able to carry out all these tests the superintendent can more accurately establish the quality of his product. Whereby a broader basis of comparison of his paper with that manufactured by other companies also he can more accurately establish the quality of samples which he is required to match.

"Under the chemical department research work can be carried on, on any problem and the facts can be developed which will show whether or not the process has any commercial value. To assist in this research work the University has available one of the most complete technical libraries in the country, it also has available specially trained men on all of the various scientific subjects which can be called into consultation on any special problem. The University is offering this service purely with the desire to render assistance to the industry so that they can raise their standard of production. The University also feels that this work will interest more of its students in the manufacturing of paper which will give a larger supply of trained men to the industry in the future."

In the hands of Prof. White and Prof. Hayward, who for some time past have been interested in the matter of improving the pulp and paper industry, this experiment cannot fail to be a success, and in this event it is to be hoped that the idea will be rapidly taken up by suitably equipped universities in other states. Profs. White and Hayward are certainly to be commended for their progressiveness in starting this new department.

TO DISCONTINUE PAPER STATISTICS

The annuoncement by the Federal Trade Commission at Washington that it will discontinue its report on the production and consumption of pulp and paper is to be regretted. This action, however, is not so surprising because, if our recollection serves correctly, this step was contemplated two years ago, but was not put into effect because certain interested persons convinced the commission that the reports were too valuable to discontinue. Now, however, it is stated that because of financial reasons the work cannot any longer be carried on.

This statistical work was begun by the Commission in 1917, when monthly reports were secured from paper manufacturers, jobbers and publishers, and monthly bulletins were published including information on production, consumption, shipments, receipts, commitments, stocks and prices.

"While wide interest has been manifested in these statistics," says the Commission, "there has been considerable difficulty in getting complete and prompt returns, as the work is done entirely on a voluntary basis. Moreover the heavy increase in the expense of the Commission for its legal work has made it seem necessary to reduce the amount of its appropriation allowed to economic and statistical work. In view of this condition the Commission has determined to discontinue statistical work on paper."

The figures on the production, consumption, shipment, etc., of pulp and paper as furnished monthly by the Federal Trade Commissioner have come to be so widely used by individuals and concerns that they cannot fail to be greatly missed, and it is to be hoped that the various associations in the paper trade will consider the matter of carrying on the work. With the exception of furnishing figures for consumption, the News Print Service Bureau has been compiling these statistics ever since its organization, carrying on the work along these lines, in fact of the old News Print Manufacturers' Association, which it succeeded. The news print division of the market will, therefore, be ably taken care of, and the various other associations in the paper trade should lose no time in making arrangements to take care of their sections of the market in some similar manner.

If possible the work should be taken up from the point where it is being discontinued by the Federal Trade Commission, as otherwise an unfortunate break in the figures will occur. This should make the associations appreciate the importance of immediate action in the matter.

PAPER MILL WAGES INCREASING

Employment figures which have just been compiled by the Bureau of Labor Statistics of the Department of Labor at Washington show that in spite of the slight slowing up in the pulp and paper industry during May, wages continued to increase.

Reports were received by the Bureau from 162 pulp and paper plants showing the employment in these plants in April to have

been 50,750, decreasing slightly in May to 50,251, or a decrease of 1 per cent. The payrolls in these same plants, on the other hand, increased from $1,298,426 in April to $1,325,898 in May, or an increase of 2.1 per cent.

The Bureau also received reports from 142 paper box plants, showing the employment in these plants in April to have been 14,856, decreasing slightly in May to 14,790, or a decrease of 5 per cent. The payrolls in these plants, on the other hand, increased from $301,103 in April to $303,961 in May, or an increase of 9 per cent.

The Bureau also received reports from 79 paper and pulp mills comparing the employment in May of last year with the same month of this year. In May of last year these 79 mills employed 25,065, increasing in May of this year to 29,251, or an increase of 16.7 per cent. The payrolls in these plants also increased from $584,991 in May of last year to $781,348 for the same month of this year, an increase of 33.6 per cent.

Canadian Paper Exports Increase

According to a report issued by the Canadian Pulp and Paper Association on the exports of pulp and paper in May were valued at $11,558,684 as compared with a total of $9,397,472 in the previous month.

The value of the various items exported was as under:

	May, 1922		May, 1923	
PAPER:	Cwts.	Value	Cwts.	Value
News Print	1,515,657	$5,361,102	1,978,016	$7,448,162
Book Paper	562	4,544	3,221	20,244
Other Paper & Mnfrs.	—	—	—	541,122
		$5,779,669		$8,009,528
PULP:				
Sulphate	251,490	$763,505	233,771	$763,925
Sulphite Blchd.	249,823	987,247	307,483	1,343,874
Sulphite Unblchd	225,537	594,580	326,670	912,919
Mechanical	325,119	397,829	330,399	528,438
	1,051,969	$2,743,161	1,198,323	$3,549,156

Exports were considerably greater than in May 1922. Newsprint increased by 462,359 cwts, bleached sulphite pulp by 57,660 cwts and the total value by $3,026,854.

The exports were distributed according to the following table:

	Paper	Pulp	Total
U. S. A.	$7,638,802	$3,387,328	$11,026,136
U. S. Kingdom	131,792	27,630	159,422
All Other	238,934	134,198	373,132
	$8,009,528	$3,549,156	$11,558,684

Comparing the first two months of the current fiscal year with the corresponding two months of 1922 we have a big increase in the value of these exports for this year. For April and May 1923, the total value of the pulp and paper exports was $20,956,156 while for these two months in 1922 the total value was $15,013,189, so that this year shows an increase of nearly six million for the two months.

The details for the two months ending May 31 are as follows:

	Two Months 1922		Two Months 1923	
PAPER:	Cwts.	Value	Cwts.	Value
News Print	2,744,703	$9,733,063	3,545,577	$13,314,163
Book Paper	597	5,104	5,457	36,761
Other Paper & Mnfrs.	—	733,565	—	1,104,814
		$10,471,732		$14,455,738
PULP:				
Sulphate	414,738	$1,275,120	425,870	$1,381,950
Sulphite Blchd.	412,805	1,642,150	524,425	2,319,141
Sulphite Unbleached	391,883	1,047,144	634,397	1,758,771
Mechanical	454,076	577,043	650,233	1,040,556
	1,673,502	$4,541,457	2,234,925	$6,500,418

Our exports of pulpwood in these two months amounted to 187,967 cords, valued at $1,713,125 compared with 124,778 cords valued at $1,216,631 exported in the corresponding two months of 1922.

Confer on Paper Standardization

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., June 27, 1923—The paper standardization question which has been studied by the paper laboratory of the Bureau of Standards for the past two years came to a head on June 19 when a general conference was held at the Bureau, attended by some seventy-five paper manufacturers, paper merchants, and representatives of the printing industry, as well as government experts.

As a result of the conference resolutions were passed adopting the final reports submitted by the various committees and subcommittees, which have already been printed in full in PAPER TRADE JOURNAL. These resolutions which approved the adoption of the reports, together with the reports themselves will be sent to the various branches of the paper industry by the Department of Commerce in the near future. It is proposed to hold similar conference at the Bureau at least once a year at which time the existing standards will be revised and brought up to date.

The conference was called to order by the new Assistant Secretary of Commerce, Walter Drake, who told the paper men of the great interest which Secretary Hoover is taking in the matter of standardization and simplification in all industries. Secretary Drake then introduced Wm. A. Durgin, chief of the Simplified Practive Division of the Department of Commerce who gave a talk on the work done in other industries in the elimination of waste by his division. He pointed out that the only interest of his division is to eliminate the unnecessary but not in any way to curtail variety to such an extent that individual initiative would be hampered.

Dr. George K. Burgess, the new director of the Bureau of Standards was introduced and explained briefly the position of the bureau with regard to the question of standardization and simplification. He pointed out that the bureau was not in the position of demanding or forcing standardization of simplification in the industry but was simply in the position of advising with industries in enabling them to put across anything having to do with elimination of waste. Secretary Drake acted as chairman of the conference.

The remainder of the conference was taken up in a general discussion of the various reports by the attendants of the conference.

Definition of Standard News Print

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., June 27, 1923.—No official decision of standard news print paper has yet been made public by the Custom Service of the Treasury Department in spite of that fact that the definition has been hanging fire ever since the present tariff act became operative.

It is true that some few weeks ago the Treasury Department gave out a definition, but this was no sooner placed in the hands of the press than it was withdrawn. The notice was premature.

While officials of the Treasury Department who are wrestling with this proposition are not disposed to discuss the situation it is generally understood that the newspaper publishers themselves have been at loggerheads as to a fit definition. Some of them are actually claiming that rotogravure paper should be allowed to come into the United States free of duty as news print paper. Others, of course, are not so extreme in their views. Insofar as can be learned the Treasury officials have not consulted a single news print paper manufacturer.

G. E. Miller Goes With Carthage Sulphate Co.

CARTHAGE, N. Y., June 27, 1923.—George E. Miller of Syracuse has been engaged by the Carthage Sulphite Pulp and Paper Company to take charge of its sulphite department. Mr. Miller is a pioneer in the paper making industry in this section. He has spent several years abroad, studying methods of paper making. Mr. Miller is a specialist in the manufacture of sulphite pulp.

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Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G. MacNAUGHTON, Secretary

DEGREE OF DISSOCIATION AND UNSAPONIFIABLE MATTER IN ROSIN SIZE*

By A. Haug

The resins used in the manufacture of paper belong to the class of hard resins, in contradistinction to the soft resins, the so-called balsams. Crude resin, that is the secretion obtained from pine trees, is distilled either by direct fire or by means of steam to obtain from it the turpentine that it contains. The residual mass, that is left behind after the distillation process, is the common rosin of commerce. The resins or rosin are insoluble in water; on the other hand they are readily soluble in alcohol, ether, chloroform, benzol, acetone, carbon bisulphide, carbon tetrachloride, turpentine and the essential oils. Rosin is particularly characterized by its conchoidal fracture; its color varies from a light yellow to almost a black. The composition varies considerably in accordance with its origin, the age of the trees from which it is tapped, the time of the year at which the tapping is carried out and the distillation process to which it is subjected when removing its turpentine content. The most widely used rosin, that of American manufacture consists for the most part of an acid substance, known as abietic acid, which is mixed with a number of cleavage products, such as colophthalin, colophen, etc., rosin oils, acid hydrates, oxidized resinic acids and a certain amount of turpentine which remains behind from the distillation.

Composition and Saponification of the Rosin

The resin acids or abietic acids enter into combination with alkalies or bases, just as ordinary inorganic acids, with the formation of salts. These solutions of the desinic acids in alkalies are known as rosin soaps or resinates or abietates. When caustic soda is employed, the product is sodium resinate or a sodium rosin soap. The rosin can then be precipitated from this solution by the addition of mineral acids. Each rosin then requires a different proportion of sodium hydroxide for saponification because of its varying composition. That quantity of sodium hydroxide, expressed in grams, which is required for the neutralization of 100 grams of rosin or which is needed for complete saponification of the rosin, is called the acid or the *saponification number*. The *acid number* is obtained by the titration of a cold acoholic solution of the rosin with N/10 sodium hydroxide. The *saponification number* is determined by treating the rosin with hot N/10 caustic soda solution in excess and then titrating back the excess with N/10 sulphuric acid. The difference between these two characteristics of the rosin is called the *ether number*. This difference bears a close relation to the proportion of oxidized resinic acids present in the rosin, the so-called petroleum-insoluble portion. The ether number also stands in close relationship with the color of the rosin; the greater the ether number, the darker the rosin.

Inasmuch as the acid number and the saponification number always varies, we must assume that there are certain proportions of unsaponifiable matters present in the rosin, which are termed the unsaponifiables. Under abnormal conditions certain rosins may contain as high as 20 per cent. unsaponifiable matter. This unsaponifiable matter is characterized as being composed of all the constituents, which are not acid in nature, but which are soluble in petroleum ether. These observations regarding the nature of the unsaponifiable matter are consequently very varied in nature, and we can see therefrom that we are concerned here with a very complicated substance indeed.

The melting point of rosin varies within wide limits, between 70 and 80°C; in certain cases the melting point can be as high as 120°C. The saponification number of pure syloinic acid is 13.2. The alkaline salt obtained in this manner is a yellowish, brittle mass, which is easily soluble in water and in alcohol. On the other hand the calcium and magnesium salts are white, flocculent precipitates which are not soluble in water but which are easily soluble in alcohol.

It is an important point that while the lightest kinds of rosin are generally best suited for the sizing of paper, particularly on account of their lack of color, nevertheless there are times when the darker colored rosins are better suited for paper making than these light rosins. The experiments which were carried out in this investigation were made with American rosin having the following characteristics:

Impurities. O.02 per cent.
Melting point. 71.8°C on the average.
Acid number 11.67.
Saponification number 11.94.

Rosin Soaps and Rosin Milk

According to the saponification number 11.94 there were required exactly 11.94 grams of caustic soda, equivalent to 15.8 per cent. of 100 per cent. sodium carbonate, for the complete saponification of the American rosin used in the experiments. Most rosin sizes are solutions, containing more or less unsaponified rosin, the so-called free rosin, dissolved in rosin soap or sodium resinate. However, there are both an upper and a lower limit for this free rosin, which

* Wochenblatt fuer Papierfabrikation, 1922, 3935-8, 1923, 25-7, 243-5, 313-4.

Technical Section, Page 244

must not be overstepped due to the solubility conditions. The rosin size, which is prepared in this manner, is then dissolved in hot water to produce the so-called rosin milk and the paper stock is brought in contact with this milk and the fibres are filled up with it.

The sizing of paper is for the purpose of preventing the penetration of water and aqueous solutions. It is therefore necessary to envelop the paper or the fibres with a film or a precipitated membrane, which meets these requirements. In the first case we are concerned with surface sizing and in the second case with mass sizing. In the latter case, sizing in the mass, an attempt is made to coat each individual fibre with a film of material, which prevents the penetration of water through its structure. The discoverer of rosin sizing, Illig, says in his article published in 1806, that it is first necessary to dissolve a substance, insoluble in water, in such a manner that it can be mixed with the paper stock. When this mixture has been made in as thorough manner as possible and the individual fibres have been thoroughly impregnated with the solution, and consequently are covered with it, the solvent must then be removed from the dissolved sizing material, so that it becomes insoluble once again. Illig consequently only wanted to dissolve the rosin, in order to mix it in the finely sub-divided condition in a thorough manner with the fibres, and then after the mixing had been completed to bring the rosin back again into its original condition. In other words the fibres of the paper are thus covered with free rosin in an extremely fine state of sub-division.

Sizing is Effected by Free Rosin

Hence, the discoverer of rosin size adopted the principle at the start that the active agent in the sizing process was the free rosin. There are many chemists and paper technologists and practical paper makers, who believe differently and who assign the sizing action of the size to the precipitation of resinate of alumina on the fibres by means of papermakers' alum. Dr. Wurster, the well-known French investigator, proved by his valuable investigations that the Illig theory is the only correct one and that free rosin alone is the active sizing agent. Although resinate of alumina results in a precipitate, nevertheless this precipitate is decomposed by the addition of more sulphate of alumina into free rosin and basic sulphate of alumina. Another theory has been advanced, namely that of Sieber, who says that it is quite possible that resinate of alumina is formed as such and that it exerts a certain sizing action on the paper fibres, but that there is also the possibility that aluminum hydroxide absorbs free rosin, holding it in a combination which stubbornly resists dissolution or the hydroxide actually enclosing it is in an occluded condition.

It is safe to say that the nature of the precipitation, the concentration of the solutions, the temperature and the rapidity of the addition of the sulphate of alumina play important roles in the process; these conditions have not yet been investigated. The use of sulphate of alumina for similar purposes, as in the finishing of textile fabrics, has been known for quite a long time in the past. In the place of sulphate of alumina other reagents may be used, as for example sulphuric acid alone, but for all practical purposes just sulphate of alumina need be considered here.

The question also arises why was alum, that is sulphate of alumina, used at the very outset by Illig for the precipitation of a solution of rosin size. This fact may be explained as being due to the affinity which alumina has for the cellulose fibres, a phenomenon which was known at the time Illig made his discovery.

The Art of Sizing with Rosin

Expressed in few words, the entire art of sizing consists in coating the cellulose fibres with a film of rosin in as fine as possible a degree of sub-division. In this connection the manner in which the rosin is precipitated, is of extraordinary influence on the sizing quality produced in the paper. For it is a well-established fact that the size and the number of rosin particles vary in accordance with the conditions of the precipitation and the presence of other substances in the rosin size and precipitating agent. The first thing that the paper maker found was that the water, used in the manufacturing process, which varied very considerably in its composition, was the principal reason why the results obtained with rosin size varied so much. The water was also the cause of a marked disturbance in the emulsions of microscopically fine particles of rosin. In further investigation of the causes of the disturbance of the emulsions of rosin size, it was found that those constituents of the rosin, which cannot be considered as resinic acids, which cannot be saponified, and which are designated by the term "unsaponifiable matter," must be placed in this category unconditionally.

Simultaneous Action of Salts on Rosin and on Emulsions

It has been observed by various authors that the salts which on the one hand are able to precipitate rosin from its solutions, have on the other hand a disturbing influence on the emulsion, and the emulsification process. At the present time there is almost nothing or at any event but very little information available on the effect of various factors, particularly from a quantitative standpoint, on the processes that take place in the preparation of rosin milk emulsions and in the sizing of paper with these emulsions. Of special importance among these factors are the influence of the water used in the manufacturing process and the effect of the proportion of unsaponifiable matter in the original rosin.

The purpose of this investigation is therefore to be the explanation of only a few of the very many complicated relations that exist between rosin size, the unsaponifiable matter in the rosin and the salts dissolved in the factory water. The main object is to find out by means of experiments whether there is any exact quantitative relation that can be worked out between these various factors.

Various Fundamental Relationships

The fundamental condition that must be fulfilled in this experimental work is the establishment of the simplest relations, the elimination of all disturbing factors and the working under the least complicated conditions possible. In the first place the author used completely saponified rosin, free from salts, that is rosin which had been saponified with distilled water and which was free from unsaponifiable matter. A size, which contains much free rosin and unsaponifiable matter and which is made with the aid of factory water, is, of course, more interesting than the other from a practical standpoint, and such a size was investigated as well.

The following conditions and relations were investigated:

1. a. Sodium resinate alone, prepared with distilled water and with raw water.
   b. Sodium resinate with unsaponifiable matter, prepared with distilled water and raw water.
   c. Sodium resinate with free rosin, prepared with distilled water and with raw water.
   d. Sodium resinate with unsaponifiable matter and with free rosin, prepared with distilled water and with raw water.
   e. Sizing experiment with preparation c; unsaponifiable matter 10 per cent of the 20 per cent sizing solution.
   f. Sizing experiment with preparation c; unsaponifiable matter 50 per cent of the 20 per cent sizing solution.
   g. Sizing test with distilled water.
2. a. Sodium resinate with sodium chloride in proportion of 0.05 gram in two litres of distilled water.
   b. Sodium resinate with sodium chloride in the proportion of 0.25 gram in two litres of distilled water.
   c. Sodium resinate with sodium sulphate in the proportion of 0.10 grams in two litres of distilled water.
   d. Sodium resinate with calcium sulphate in the proportion of 0.62 grams in two litres of distilled water.

Conditions of the Experiments

Each inorganic base, each salt is, as is well known, split up into

its component parts up to a certain proportion, in accordance with the degree of the dissociation, when dissolved in water; the dissociation is greater, the more dilute the solution. Some salts are completely dissociated in water in certain definite concentrations. Similar conditions apparently prevail in the case of sodium resinate. When pure sodium resinate, that is completely saponified rosin, is dissolved in distilled water, then as the dilution of the solution increases, the solution becomes more and more turbid. The solution which was clear at the outset becomes strongly milky. It may now be conjectured that in this case the sodium resinate decomposed, on the one hand into resinic acid, and on the other hand into caustic soda, which itself may react with water again. However, this resinic acid must be present in the rosin milk in particles of microscopic size and we have very substantial reasons for considering such particles to exist in a so-called emulsion, which is particularly advantageous from the standpoint of sizing. We may also assume that a hydrolytic decomposition takes place as well, analogous to what takes place with fatty soaps, wherein a similar phenomenon is observed. This phenomenon may be represented chemically by the following reversible equation:

$C_{20}H_{29}O_2\,Na + H_2O = C_{20}H_{30}O_2 + NaCH.$

This apparently entirely advantageous splitting off of free rosin will be investigated under exact conditions; the effect of the unsaponifiable matter and of the inorganic salts will also be investigated.

We will consider here first the simplest case, that of sodium resinate in distilled water. For the purpose of explaining the results to better advantage, they have been plotted and curves have been drawn. The concentrations of the rosin soap are taken as the abscissae (grams of rosin per liter) and percentages of free rosin in the rosin are plotted as ordinates. From figure 1, it may be seen that the dissociation increases very slowly from 40 grams per liter to 15 grams per liter, but it increases more rapidly from 10 to 12 grams per liter and appear to reach a maximum somewhere

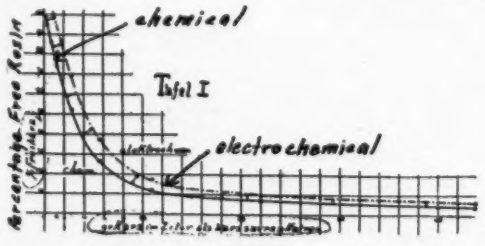

FIG. 1.

Dissociation Curves. Sodium Resinate in Distilled Water. (Data obtained by chemical and electro-chemical methods). (Abscissae: grams rosin per liter as sodium resinate).

between these concentrations. It is possible that the soap is finally dissociated in its entirety. This theory is substantiated by the steep slope of one arm of the curve. It must cut the ordinate axis at a point equivalent to 100 per cent. dissociation. The various rosin soap solutions, which were experimented with had the following appearance:

43.9 grams per liter. Clear brown color.
21.95 grams per liter. Clear brownish yellow color.
10.97 grams per liter. Clear yellow color.
5.48 grams per liter. Whitish color, slightly opalescent.
2.74 grams per liter. White color, strong opalescent.
1.37 grams per liter. White color, strong opalescent.
0.68 grams per liter. Color becomes lighter according to dilution.
0.34 grams per liter. Color becomes lighter according to dillution.

Description of Curves

The regular course of the curve allows the following assumption to be made, namely that we are concerned in this case with a phenomenon of pure chemical dissociation. This assumption is strongly substantiated by the fact that the solution of soap has an alkaline reaction. The ionic dissociation as well as the hydrolytic splitting are closely related to the electrolytic dissociation. Advantage was taken of the method of determining the degree of dissociation by measuring the resistance of the solution. This method also gave results which indicated that a pure chemical dissociation took place in the solution of rosin soap. This assumption was proven very handily. The results were plotted on curve sheet I only as relative values and gave about the same form of curve that was obtained by the chemical method. The small deviations (distances between the two curves) are to be laid to experimental error. Further

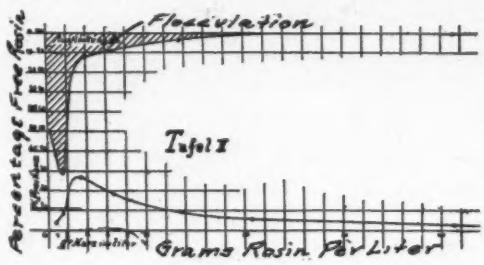

FIG. 2.

Dissociation Curves Sodium Resinate in Raw Water.

proof of the fact that we are concerned with pure chemical dissociation in the solution of rosin soap is thus provided.

Use of Factory Water in Making Rosin Soap

After the exact constitution of the rosin soap, pure sodium resinate, had been determined, we were ready to introduce a factor, which had not been included in the first experiments. To this and raw water was used in making the rosin milk. An entirely different picture was obtained when this was done, as could be seen from the curves plotted in figure 2. The external appearance of the two soaps indicated that in the second case entirely different conditions obtain. One particular fact that must be mentioned is that the strongly milky turbidity, which is due to the free rosin and which results in concentrations of rosin soap from 5 grams per liter down, is not observed when factory water is used. The decomposition seems to have been repressed. Furthermore, as the rosin soap is diluted down from 10 grams per liter, an ever-increasing precipitation of the rosin takes place, and it becomes particularly strong at a concentration of 1.25 grams per liter. The precipitate is flocculent at that point. It is striking that the flocculation should be so strong just at this concentration of 1.25 grams per liter.

The precipitate was filtered off without any of the dissociated part of the filtrate being left behind on the filter paper or the glass wool. The degree of the dissociation and the total rosin, hence the rosin which was not precipitated, were determined and the results were plotted, as seen in figure 2. In comparison with the results plotted in figure 1, the dissociation is much less than when pure water is used in making the rosin soap. The highest value of the dissociation is attained at approximately 3 grams per liter with 27 per cent. free rosin, which corresponds to a free rosin content of 50 per cent. in the solution of rosin soap, made under similar conditions but in pure water.

The following may be said in regard to the precipitates. The first precipitates are probably calcium resinate, as a test for lime can be found in the same. On the other hand, the precipitation which took place when the rosin soap reached a concentration of 1.25 grams per liter was that of rosin. After the precipitation the content of rosin in the solution became considerably less. From this fact it may be concluded that the degree of dissociation increased considerably as well. But just the contrary happens, and

this is most probably due to the fact that the percentage of salt in the solution increased.

The manner in which this phenomenon of sudden precipitation of the rosin soap solution took place, led us to compare it with the precipitation of colloidal solution of fatty soaps that is, soaps of the fatty acids) due to the presence of a definite amount of salt. As soon as the proper amount of salt is present, the soaps are precipitated. This point, at which the precipitation first occurs, is known as the hydration value. We will come back to this later in our discussion, and it will be shown which salts are principally responsible for the precipitation and which serve to hinder the dissociation. We see from this that in the first place the actual number of dissociated particles in the soap solution are decreased, and then at a concentration of 1.25 grams per liter, precipitation of the rosin takes place. We will first be able to draw a really accurate conclusion of the effect of these salts on the sizing, after we have given due consideration to the various other possibilities that may enter into the matter; in this way only can a really valuable deduction be made.

(To be continued)

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John Matthews Discusses Export Prices

WASHINGTON, D. C., June 26, 1923.—John Matthews, Jr., chief of the Paper Division of the Department of Commerce discussing domestic prices applied to the export business says: With the improvement in domestic business and the natural upward trend in prices there is a tendency to increase prices on export business and thus render it more difficult to meet foreign competition. The European producers have been quick to take advantage of this situation and reports have been received indicating that in some markets where American papers have enjoyed a preference, our competitors are gaining trade.

"It is true that European prices are also advancing slightly, but, having once gained a foothold, it will be difficult to displace competing lines. Our one advantage lies in the fact, that in some markets, we can make deliveries within a month to six weeks, whereas the European suppliers are taking from three to six months. Although this reduces to a minmum the danger of price reaction while goods are in transit, and permits the foreign buyer to carry reduced stock, price is the principal determining factor in the export markets today. If we are to continue our hold on these markets and further expand our business, this difference in price must be taken into consideration.

"Export business should not be looked upon merely from the standpoint of the profit which the individual order produces but from the broader angle of retaining a customer whose requirements will help to keep your mill running to normal capacity when domestic demand slackens. In the long run it will be to the advantage of the manufacturer to retain and expand his export trade even at a sacrifice."

REPORT OF THE PAPER TESTING COMMITTEE ON THE TEARING TEST OF PAPER*

By Sidney D. Wells[1]

At the fall meeting of the Committee for Paper Testing discussion of experiences with the testing of paper for tearing qualities was postponed until the spring meeting and the chairman requested the writer to prepare standard samples of typical papers, send them to laboratories possessing means for making tearing tests and tabulate and analyze the results returned.

As a result twelve sets of samples were sent to each of sixteen mills or laboratories who offered to assist. The papers sampled were marked with letters but were unknown to the tester except as was evident from their appearance and behavior. They were as follows:

A Banknote	G Sulphite Bond
B Onionskin	H Lithograph
C Rag Bond	I India Paper
D Bristol	K Sulphite Wrapping
E Condenser	L Ledger
F Sand Paper	M Kraft Wrapping

The following organizations responded to the request for testing the samples and returned tests.

American Writing Paper Company, District of Columbia Paper Manufacturing Co., Eastern Manufacturing Company, Fletcher Paper Company, Forest Products Laboratory, Fox River Paper Company, General Electric Company, Pittsfield Plant, Hammermill Paper Company, Hamersley Manufacturing Company, Nashua Gummed & Coated Paper Company, Oxford Paper Company, Parker-Young Company, Strathmore Paper Company, Union Bag and Paper Corporation, U. S. Bureau of Standards, U. S. Testing Company.

The writer was late in submitting the samples but the results were obtained in every case almost by return mail and it is impossible to express his appreciation of the co-operation manifested.

The Elmendorf Tearing Tester was used by every test station except two. In one the Witham Tearing Tester was used and in the other a tester designed and used by the Eastern Manufacturing Company.

Procedure

At the suggestion of Mr. Houston, then with the Bureau of Standards, efforts were made to stipulate the number of sheets of each set for each test to give a reading of between 10 and 20 where the Elmendorf Tester was used since Mr. Elmendorf has found that more accurate results were thereby obtained. Preliminary tests were consequently made to ascertain this number and sufficient sheets taken to give each station enough to make five tests in the machine direction and five across the machine direction. The samples were cut three inches square and so taken from the larger sheets that each station received at least three double sheets from each large sheet and the position of each was a different distance from the deckle. Thus each set of samples was as nearly as possible representative of the whole. The double sheets were then cut into single sheets, one for the test in one direction and the other for the test, in the other. Great care was exercised and it is felt that but slight variation should occur in the averages of tests received from the various stations insofar as the paper is concerned. Seven stations reported that the tests were made under controlled conditions of 65 per cent relative humidity and at nine stations humidity was not controlled but at the time of the test was determined and reported. Those received from the nine in which humidity was not controlled are given in Table I. The results of the tests under controlled humidity are given in the other tables where they are analyzed to present the average, maximum deviation from average, mean deviation from average, and mean deviation of the tests for which no note was made as to splitting or tearing more than twenty degrees from the direction desired.

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry.

[1] Engineer in Forest Products, Forest Products Laboratory, U. S. Department of Agriculture, Madison, Wisconsin, and member of the Committee on Paper Testing, Technical Association of the Pulp and Paper Industry.

TABLE I

Type of paper	Station number	Relative humidity per cent	Maximum + grams	Maximum − grams	Minimum + grams	Minimum − grams	Average + grams	Average − grams	Average (with irregular tests omitted) + grams	Average (with irregular tests omitted) − grams
Banknote	9	71	68	66	64	56	66	61	66	61
	10	53	76	76	66	62	71	68	71	68
	11	45 to 55	78	68	68	64	72	67	72	67
	12	50	72	76	67	70	68	73	68	73
	13	47	82	89	73	76	78	81	78	81
	14	42	72	64	64	60	68	61	68	61
	15	40	70	70	66	68	68	69	68	69
Eastern Manufacturing Co. Tester used	16	51	91	92	80	72	86	78	84	78
Witham Tester used	17	..	..	..	..	..	130	115	130	115
Onionskin	9	71	30	26	28	22	29	24	29	24
	10	53	32	27	30	25	31	26	31	26
	11	45 to 55	32	27	30	24	31	26	31	26
	12	50	32	27	29	23	30	24	30	24
	13	47	41	32	37	30	38	31	38	31
	14	42	32	24	28	22	30	23	30	23
	15	40	31	26	30	24	31	25	31	25
Eastern Manufacturing Co. Tester used	16	51	42	34	41	32	42	33	..	33
Witham Tester used	17	..	..	..	..	..	..	..	..	..
Rag Bond	9	71	56	64	48	50	52	58	52	58
	10	53	64	64	54	56	59	60	59	60
	11	45 to 55	66	60	40	56	52	58	52	58
	12	50	61	64	52	58	58	60	58	60
	13	47	89	79	67	70	75	76	75	76
	14	42	60	60	52	60	56	60	56	60
	15	40	66	56	60	56	62	56	62	56
Eastern Manufacturing Co. Tester used	16	51	68	78	64	72	66	74	66	74
Witham Tester used	17	..	..	..	..	..	..	..	..	..

TABLE I—CONTINUED

Type of paper	Station number	Relative humidity per cent	Maximum + grams	Maximum − grams	Minimum + grams	Minimum − grams	Average + grams	Average − grams	Average (with irregular tests omitted) + grams	Average (with irregular tests omitted) − grams
Bristol	9	71	168	136	152	124	162	131	162	131
	10	53	184	152	168	132	176	139	176	139
	11	45 to 55	104	152	160	136	170	141	166	141
	12	50	183	147	165	134	176	142	171	142
	13	47	165	147	153	128	160	137	160	137
	14	42	184	160	160	136	174	149	172	149
	15	40	164	140	176	136	172	138	172	138
Eastern Manufacturing Co. Tester used	16	51	195	162	188	155	190	160	192	161
Witham Tester used	17	..	...	...	...	...	320	280	320	280
Ledger	9	71	232	160	168	144	200	147	200	147
	10	53	200	184	184	176	194	178	194	178
	11	45 to 55	206	184	176	144	195	166	192	157
	12	50	183	171	159	159	171	166	171	165
	13	47	183	159	147	147	169	152	169	152
	14	42	208	192	160	160	189	166	168	166
	15	40	96	80	92	72	94	77	94	77
Eastern Manufacturing Co. Tester used	16	51	210	185	185	170	198	177	185	177
Witham Tester used	17	..	...	...	...	...	321	279	321	279
Condenser	9	71	216	208	192	144	203	184	203	184
	10	53	272	240	240	208	256	227	256	227
	11	45 to 55	264	232	216	208	237	219	224	224
	12	50	244	244	220	196	235	225	220	216
	13	47	269	257	232	220	244	240	244	240
	14	42	240	224	208	160	221	205	208	...
	15	40	216	208	248	192	227	195	219	195
Eastern Manufacturing Co. Tester used	16	51	340	310	315	255	329	287	...	295
Witham Tester used	17	..	...	...	...	...	348	382	348	382
Sand Paper	9	71	512	432	432	384	470	397	470	397
	10	53	480	488	448	448	466	467	480	467
	11	45 to 55	496	472	480	408	498	450	...	429
	12	50	526	532	477	464	499	490	...	477
	13	47	513	513	440	428	482	477	482	477
	14	42	544	480	464	416	496	451	...	...
	15	40	568	496	520	448	542	470	520	470
Eastern Manufacturing Co. Tester used	16	51	535	540	460	500	496	515	...	...
Witham Tester used	17	..	..	..	..	..	..	..	..	..
Sulphite Bond	9	71	60	46	52	40	55	42	55	42
	10	53	64	58	56	52	60	55	62	55
	11	45 to 55	64	48	52	42	56	46	54	46
	12	50	61	52	55	49	60	50	..	50
	13	47	58	52	49	37	54	46	54	46
	14	42	60	56	56	48	58	51	60	51
	15	40	58	46	54	44	56	45	56	45
Eastern Manufacturing Co. Tester used	16	51	72	59	59	46	67	54	..	54
Witham Tester used	17	..	..	..	..	..	78	74	78	74
Lithograph	9	71	58	48	56	48	57	48	57	48
	10	53	40	35	38	31	39	33	40	33
	11	45 to 55	33	32	33	28	33	30	33	30
	12	50	35	34	34	28	35	30	34	30
	13	47	35	32	34	29	34	31	34	31
	14	42	44	38	38	28	41	33	..	28
	15	40	36	33	34	29	35	31	35	31
Eastern Manufacturing Co. Tester used	16	51	36	34	34	34	35	34	35	..
Witham Tester used	17	..	..	..	..	..	51	47	51	47
India	9	71	10	8	10	8	10	8	10	8
	10	53	12	10	10	10	11	10	11	10
	11	45 to 55	..	..	..	..	9	8	9	8
	12	50	11	10	10	10	11	10	11	10
	13	47	13	13	13	13	13	13	13	13
	14	42	12	8	12	8	12	8	..	8
	15	40	10	9	9	10	9	9	9	9
Eastern Manufacturing Co. Tester used	16	51	..	..	..	..	..	..	..	..
Witham Tester used	17	..	..	..	..	..	..	..	..	..
Sulphite Wrapping	9	71	38	24	32	22	36	23	36	23
	10	53	46	40	36	32	40	35	40	35
	11	45 to 55	40	28	36	24	38	27	38	27
	12	50	46	28	37	24	40	25	40	25
	13	47	46	31	34	24	40	28	40	28
	14	42	40	32	32	28	38	30	38	30
	15	40	38	20	36	26	37	28	37	28
Eastern Manufacturing Co. Tester used	16	51	56	40	46	36	50	38	50	38
Witham Tester used	17	..	..	..	..	..	62	47	62	47
Kraft Wrapping	9	71	80	80	64	72	72	78	72	78
	10	53	100	104	96	96	94	100	94	100
	11	45 to 55	100	116	84	88	91	97	84	97
	12	50	92	92	79	86	86	87	86	87
	13	47	116	110	98	82	105	101	105	101
	14	42	96	135	80	96	85	114	85	110
	15	40	96	96	84	84	90	93	90	93
Eastern Manufacturing Co. Tester used	16	51	103	120	95	108	98	114	...	115
Witham Tester used	17	..	...	...	...	...	127	122	127	122

Discussion

In the case of onionskin, rag bond and bristol, the maximum deviation of individual tests from each station from the average for that station with but one or two exceptions were less than 10 per cent. With three exceptions in the case of bond paper and only one exception in the others the mean deviation for the same papers was less than 5 per cent. The station averages varied more having maximum variation of from 9 per cent to 16 per cent with the exception of bristol which had an extreme variation of nearly 40 per cent. By eliminating one set of tests from the station that ran two sets, the first of which was made by an inexperienced operator, would reduce the maximum variation to less than 15 per cent. The average deviation of the station averages was 10 per cent or less. In the case of ledger the same statements hold with

TECHNICAL SECTION, PAGE 249

the exception that the maximum variation of individual tests was greater being almost thirty per cent with one exception which was almost 53 per cent. This was made, however, in the same series by the same operator referred to above. The fact that single sheets were used would explain the greater variation of individual tests. Considerable splitting was also encountered.

In the case of condenser and sand papers, both made from rope, the variations of individual tests are greater than for the other types probably on account of the fact that individual sheets were used, the values very high, and the formation of such papers are usually less uniform than for the majority of types. More splitting and running off at an angle was encountered with this type of papers than with the others.

In the case of sulphite bond the maximum variation of individual tests from the average was 16 per cent while the mean was less than 9 per cent in each case. The station averages were even better. The same may be said of the lithograph.

In the case of India paper the variation of the individual tests was about the same as for sulphite bond and lithograph. The maximum variation of one of the station averages from the averages was slightly over 18 per cent but when it is considered that thirty-two sheets were torn in each tear and the values are low the results check very well.

Banknote Paper

Four Sheets Tested Per Tear—Average Force to Tear Single Sheet

Station number	Maximum +	Maximum −	Minimum +	Minimum −	Average +	Average −	Average with irregular tests omitted +	Average with irregular tests omitted −	Maximum deviation from average +	Maximum deviation from average −	Mean deviation from average +	Mean deviation from average −
	gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.	%	%	%	%
1	76	75	74	68	75	70	75	70	1.3	7.1	.8	3.1
2	76	76	73	68	74	72	74	72	2.7	6.1	1.1	2.9
3	76	94	70	66	72	75	72	75	6.2	25.7	2.7	12.0
4	68	68	62	58	64	63	64	63	6.2	8.2	2.5	4.0
5	76	74	70	68	74	72	74	72	5.4	5.0	2.2	2.0
6	82	77	70	66	78	71	77	71	9.8	8.5	5.5	5.5
7	68	68	68	64	68	66	68	64	0.0	3.7	0.0	2.9
8	74	68	68	64	70	68	68	68	5.1	8.9	3.8	2.9
Average of station averages, grams										+71.9		—69.4
Maximum deviation from average, per cent										+10.9		— 8.9
Mean deviation from average, per cent										+ 4.7		— 4.6
Number of stations reporting defective tests										+ 1		— 1
Mean deviation from average with defective tests omitted, per cent										+ 5.0		— 4.6

Onionskin Paper

Eight Sheets Tested Per Tear—Average Force to Tear Single Sheet

Station number	Maximum +	Maximum −	Minimum +	Minimum −	Average +	Average −	Average with irregular tests omitted +	Average with irregular tests omitted −	Maximum deviation from average +	Maximum deviation from average −	Mean deviation from average +	Mean deviation from average −
	gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.	%	%	%	%
1	37	31	32	29	35	30	35	30	8.6	3.3	4.6	2.7
2	35	30	34	28	35	29	35	29	2.9	4.1	2.3	3.3
3	...	...	...	...	...	...	...	...	...	...	...	...
4	31	24	29	22	30	24	30	24	3.3	6.4	1.7	3.2
5	38	31	33	29	35	30	35	30	9.8	4.0	4.4	2.1
6	39	31	36	28	37	29	37	29	4.4	6.6	2.8	3.0
7	30	26	30	22	30	24	30	34	0.0	8.3	0.0	6.7
8	32	30	30	27	31	28	31	28	3.9	7.2	2.1	2.7
Average of station averages, grams										+33.2		—27.7
Maximum deviation from average, per cent										+12.3		—13.4
Mean deviation from average, per cent										+ 7.7		— 7.7
Number of stations reporting defective tests										+ 1.0		— 1.0
Mean deviation from average with defective tests omitted, per cent										+ 7.7		— 7.7

Rag Bond Paper

Four Sheets Tested Per Tear—Average Force to Tear Single Sheet

Station number	Maximum +	Maximum −	Minimum +	Minimum −	Average +	Average −	Average with irregular tests omitted +	Average with irregular tests omitted −	Maximum deviation from average +	Maximum deviation from average −	Mean deviation from average +	Mean deviation from average −
	gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.	%	%	%	%
1	68	72	55	62	62	67	62	67	11.3	7.5	7.1	3.9
2	64	72	60	64	63	68	63	65	5.1	6.5	2.0	5.2
3	...	...	...	...	...	...	...	...	...	...	...	...
4	56	70	50	56	53	62	53	62	6.0	13.6	3.3	7.3
5	78	72	62	60	71	65	71	63	12.4	11.1	8.8	5.2
6	70	76	60	63	65	71	65	67	8.5	11.3	4.9	5.5
7	68	64	52	60	56	62	56	64	21.4	3.8	10.0	3.1
8	60	66	56	54	57	59	57	55	4.9	12.2	2.5	7.1
Average of station averages, grams										+60.9		—65.0
Maximum deviation from average, per cent										+16.2		— 9.5
Number of stations reporting defective tests										+ 1.0		— 3.0
Mean deviation from average with defective tests omitted, per cent										+ 7.9		— 4.4

Bristol

Two Sheets Tested Per Tear—Average Force to Tear Single Sheet

Station number	Maximum +	Maximum −	Minimum +	Minimum −	Average +	Average −	Average with irregular tests omitted +	Average with irregular tests omitted −	Maximum deviation from average +	Maximum deviation from average −	Mean deviation from average +	Mean deviation from average −
	gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.	%	%	%	%
1	192	148	180	142	183	145	...	146	4.9	2.1	2.1	1.8
2	192	156	176	148	184	153	178	152	4.3	3.1	2.4	2.5
3	208	280	168	168	182	218	188	200	14.0	28.2	5.6	18.9
4	168	140	160	128	166	133	166	133	3.4	4.5	1.7	3.1
5	184	164	176	152	179	157	180	157	2.7	4.6	1.4	1.8
6	189	162	171	141	177	150	175	150	7.3	8.2	5.1	4.9
7	168	152	160	144	163	150	160	152	2.9	4.2	2.4	1.7
8	164	148	162	140	164	144	164	142	1.2	2.8	0.2	2.2
Average of station averages										+174.4		—156.4
Maximum deviation from average, per cent										+ 8.3		— 39.6
Mean deviation from average, per cent										+ 4.8		— 10.0
Number of stations reporting defective tests										+ 6		— 4
Mean deviation from average with defective tests omitted, per cent										+ 4.7		— 8.0

Ledger

One Sheet Tested Per Tear—Average Force to Tear Single Sheet

Station number	Maximum +	Maximum −	Minimum +	Minimum −	Average +	Average −	Average with irregular tests omitted +	Average with irregular tests omitted −	Maximum deviation from average +	Maximum deviation from average −	Mean deviation from average +	Mean deviation from average −
	gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.	%	%	%	%
1	220	184	192	168	203	173	...	168	8.9	6.4	4.1	3.4
2	256	224	224	192	235	202	227	195	8.8	11.1	4.4	5.7
3	192	288	144	152	173	189	179	198	16.7	52.7	9.6	21.7
4	208	232	176	160	203	179	192	166	12.7	29.5	5.1	16.4
5	232	200	176	176	208	187	176	179	15.4	6.8	6.2	3.8
6	263	202	208	165	236	186	208	186	11.9	11.2	7.0	6.2
7	224	208	160	160	192	176	192	176	16.6	18.2	15.0	10.9
8	224	240	160	160	200	194	172	182	20.0	24.0	11.2	9.6
Average of station averages, grams										+205.6		—185.6
Maximum deviation from average, per cent										+ 16.0		— 8.6
Mean deviation from average, per cent										+ 7.9		— 3.9
Number of stations reporting defective tests										+ 6		— 7
Mean deviation from average with defective tests omitted, per cent										+ 7.5		— 5.0

Sand Paper

(rope)

One Sheet Tested Per Tear—Average Force to Tear Single Sheet

Station number	Maximum +	Maximum −	Minimum +	Minimum −	Average +	Average −	Average with irregular tests omitted +	Average with irregular tests omitted −	Maximum deviation from average +	Maximum deviation from average −	Mean deviation from average +	Mean deviation from average −
	gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.	%	%	%	%
1	628	560	523	501	561	531	...	...	11.9	5.6	5.8	4.2
2	1,040	736	720	528	855	592	...	...	21.6	24.3	12.1	9.7
3	640	560	496	480	536	531	504	531	19.4	8.0	7.8	6.4
4	496	488	448	432	474	454	472	...	5.4	7.4	3.8	3.1
5	632	540	488	464	562	502	...	...	13.1	8.3	9.4	4.1
6	1,057	801	568	452	831	664	...	...	31.6	31.9	13.5	18.9
7	656	528	480	464	544	512	525	499	20.6	9.4	9.4	5.0
8	576	480	448	416	491	448	448	440	17.3	7.2	8.0	3.6
Average of station averages, grams										+606.7		—528.1
Maximum deviation from average, per cent										+ 41.0		— 25.7
Mean deviation from average, per cent										+ 19.5		— 9.6
Number of stations reporting defective tests										+ 7		— 7
Mean deviation from average with defective tests omitted, per cent										+ 5.6		— 6.8

Sulphite Bond Paper

Four Sheets Tested Per Tear—Average Force to Tear Single Sheet

Station number	Maximum +	Maximum −	Minimum +	Minimum −	Average +	Average −	Average with irregular tests omitted +	Average with irregular tests omitted −	Maximum deviation from average +	Maximum deviation from average −	Mean deviation from average +	Mean deviation from average −
	gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.	%	%	%	%
1	69	62	64	50	66	55	...	55	4.6	12.7	2.4	5.5
2	70	56	66	52	68	54	...	54	2.9	4.4	2.4	2.4
3	68	56	60	48	67	52	67	51	10.2	7.7	8.6	6.2
4	56	48	52	44	54	45	53	44	3.7	7.1	1.5	2.9
5	68	64	60	52	62	55	61	56	9.0	15.9	3.6	6.4
6	63	58	58	49	59	53	59	53	5.6	9.2	2.5	6.4
7	60	52	52	48	56	50	56	48	7.2	4.8	2.9	3.9
8	76	52	58	48	65	50	61	50	16.6	4.8	7.6	2.6
Average of station averages, grams										+62.2		—51.4
Maximum deviation from average, per cent										+13.2		—14.4
Mean deviation from average, per cent										+ 7.0		— 6.2
Number of stations reporting defective tests										+ 4		— 1
Mean deviation from average with defective tests omitted, per cent										+ 5.8		—6.3

TECHNICAL SECTION, PAGE 250

Condenser Paper
(Rope)

One Sheet Tested Per Tear—Average Force to Tear Single Sheet

Station number	Maximum +	Maximum −	Minimum +	Minimum −	Average +	Average −	Average with irregular tests omitted +	Average with irregular tests omitted −	Maximum deviation from average +	Maximum deviation from average −	Mean deviation from average +	Mean deviation from average −
	gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.	%	%	%	%
1	273	248	269	221	271	229	...	...	0.7	8.3	0.4	3.2
2	392	328	256	264	312	288	...	...	25.6	13.9	12.3	5.6
3	400	272	256	192	301	227	328	222	32.9	19.7	15.8	15.2
4	240	198	202	176	229	184	226	184	11.5	7.6	4.5	5.2
5	296	248	264	224	280	237	...	...	5.7	5.4	3.4	4.3
6	354	324	281	257	309	281	...	257	14.6	15.2	6.2	7.0
7	320	224	240	192	272	208	259	208	17.6	7.7	9.4	4.6
8	320	232	256	192	272	210	249	200	17.6	16.7	8.8	5.5

	+	−
Average of station averages, grams	+280.7	−233.0
Maximum deviation from average, per cent	+ 18.5	— 23.6
Mean deviation from average, per cent	+ 7.1	— 11.5
Number of stations reporting defective tests	+ 7.0	— 7.0
Mean deviation from average with defective tests omitted, per cent	+ 11.8	— 9.4

Lithograph Paper

Eight Sheets Tested Per Tear—Average Force to Tear Single Sheet

Station number	Maximum +	Maximum −	Minimum +	Minimum −	Average +	Average −	Average with irregular tests omitted +	Average with irregular tests omitted −	Maximum deviation from average +	Maximum deviation from average −	Mean deviation from average +	Mean deviation from average −
	gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.	%	%	%	%
1	40	34	36	33	38	34	38	34	5.3	1.5	4.6	1.5
2	40	38	37	34	38	35	38	35	4.7	7.4	2.7	3.6
3	34	30	33	28	34	29	34	29	1.5	3.5	1.5	3.5
4	34	30	34	29	34	30	34	30	0.0	1.7	0.0	1.7
5	39	33	38	33	39	33	38	33	1.3	0.0	1.3	0.0
6	37	37	32	29	35	32	36	32	8.7	15.5	4.3	10.6
7	38	32	38	32	38	32	38	32	0.0	0.0	0.0	0.0
8	36	35	33	33	34	34	34	34	4.6	2.9	4.4	2.9

	+	−
Average of station averages, grams	+36.2	−32.4
Maximum deviation from average, per cent	+ 7.5	—10.5
Mean deviation from average, per cent	+ 5.4	— 5.0
Number of stations reporting defective tests	+ 1	— 1
Mean deviation from average with defective tests omitted, per cent	+ 5.0	— 4.9

India Paper

Thirty-two Sheets Tested Per Tear—Average Force to Tear Single Sheet

Station number	Maximum +	Maximum −	Minimum +	Minimum −	Average +	Average −	Average with irregular tests omitted +	Average with irregular tests omitted −	Maximum deviation from average +	Maximum deviation from average −	Mean deviation from average +	Mean deviation from average −
	gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.	%	%	%	%
1	12	11	11	10	11	10	11	10	6.5	10.0	3.3	3.8
2	11	10	10	8	11	9	11	9	2.8	10.8	2.3	5.9
3	10	8	10	8	10	8	10	8	0.0	0.0	0.0	0.0
4	10	8	10	8	10	8	10	8	1.3	1.6	1.3	1.5
5	11	12	11	10	11	11	11	11	1.5	6.7	1.5	6.7
6	12	10	10	8	11	9	11	9	11.3	12.9	5.5	6.2
7	12	9	12	9	12	9	12	9	0.0	0.0	0.0	0.0
8	...	...	...	...	11	10	11	10	0.0	0.0	0.0	0.0

	+	−
Average of station averages, grams	+10.9	— 9.2
Maximum deviation from average, per cent	+ 8.3	—18.3
Mean deviation from average, per cent	+ .4	— .8
Number of stations reporting defective tests	+ 1	— 1
Mean deviation from average with defective tests omitted, per cent	+ .4	— .8

The individual tests on sulphite wrapping showed a maximum variation from the average of 25 per cent and mean variation of less than 10 per cent. The maximum variations of station averages from the average was 15 per cent and the mean less than 9 per cent. With kraft wrapping both the maximum variation of the individual and station averages was greater being 21 per cent with one exception which was 40 per cent in the case of the former and less than 25 per cent in the case of the latter. The extreme variation of one of the individual tests, however, was made by the inexperienced operator in the series referred to above.

The factors influencing the tests seem to be related more to variations in the paper rather than in the instrument. Wherever more than two sheets were tested, the results check very closely and a deviation from the average of more than 10 per cent is exceptional. The mean deviation is usually less than 5 per cent clearly indicating the regularity of the instrument. The variations of the station averages, however, are more than they should be although less than the other paper testing instruments in use. The fact that the mean deviation for the station averages from the average usually greatly exceeds the mean variation of the individual tests would indicate variations in the instruments or in their set up or operation. The following causes may be responsible.

Sulphite Wrapping Paper

Four Sheets Tested Per Tear—Average Force to Tear Single Sheet

Station number	Maximum +	Maximum −	Minimum +	Minimum −	Average +	Average −	Average with irregular tests omitted +	Average with irregular tests omitted −	Maximum deviation from average +	Maximum deviation from average −	Mean deviation from average +	Mean deviation from average −
	gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.	%	%	%	%
1	46	32	42	29	43	31	43	31	7.0	6.4	2.8	3.9
2	48	34	44	32	46	33	46	33	5.3	3.7	2.8	2.9
3	40	28	30	24	34	25	34	25	17.6	11.1	9.4	5.7
4	38	26	34	24	36	25	36	25	6.7	8.0	3.6	3.8
5	52	34	42	26	46	30	46	30	13.0	13.3	5.2	8.0
6	43	32	37	24	40	28	38	28	8.3	14.1	5.5	7.0
7	40	32	28	24	36	32	36	32	22.2	25.0	8.9	5.0
8	44	34	36	28	40	32	40	32	10.0	12.5	8.0	6.3

	+	−
Average of station averages, grams	+40.0	−29.5
Maximum deviation from average, per cent	+15.0	−14.7
Mean deviation from average, per cent	+ 8.6	— 7.9
Number of stations reporting defective tests	+ 1	— 1
Mean deviation from average with defective tests omitted, per cent	+ 9.7	— 8.6

Kraft Wrapping Paper

Two Sheets Tested Per Tear—Average Force to Tear Single Sheet

Station number	Maximum +	Maximum −	Minimum +	Minimum −	Average +	Average −	Average with irregular tests omitted +	Average with irregular tests omitted −	Maximum deviation from average +	Maximum deviation from average −	Mean deviation from average +	Mean deviation from average −
	gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.	%	%	%	%
1	108	110	94	104	101	106	101	106	6.9	3.8	4.2	1.9
2	132	112	100	96	118	102	118	100	15.0	10.2	9.2	6.6
3	112	80	72	64	80	75	72	72	40.0	14.9	16.0	9.4
4	96	100	84	92	90	96	90	96	7.1	4.2	5.0	3.3
5	112	108	88	96	102	99	88	99	14.1	8.9	6.6	3.9
6	107	95	89	86	96	90	89	90	11.5	5.4	6.6	3.0
7	88	136	72	104	80	112	80	112	10.0	21.4	4.0	7.1
8	100	100	92	92	96	95	93	94	4.2	5.0	3.3	2.7

	+	−
Average of station averages, grams	+95.4	−96.9
Maximum deviation from average, per cent	+23.3	−22.4
Mean deviation from average, per cent	+ 9.4	— 8.1
Number of stations reporting defective tests	+ 4	— 2
Mean deviation from average with defective tests omitted, per cent	+10.4	— 8.6

1. Movement of the instrument on the table after having been properly leveled and 0 point adjusted. Anchoring the instrument in place would obviate this.

2. Interference of the paper in the clamps with the end of the index arm. Shortening the length of the projection above the bearing would avoid this.

3. Fluctuations in the relative humidity of the testing room. Frequent observations and control will obviate this.

4. Excessive friction of the spring plunger in the index arm bearing and the bearing itself. This should be corrected for in the adjustment of the zero point but if excessive or if the number of sheets per test are not carefully chosen so that the end point is between very close limits a considerable influence on the test is exerted. In any event it would seem that a much lighter pointer with less friction could be used.

5. The writer has no idea how carefully the instruments are calibrated with a standard. If they are closely checked and adjusted the other causes may be the sole reason for variation. Too much care could not be exercised in this regard.

The influence exerted by splitting of the sheet in the cases where splitting was reported to happen more than occasionally was to increase the test in most instances. The splitting occurs, however, only with the toughest papers of high test made of the best stock carefully drawn out in the beater and is a valuable indication of quality. For this reason it appears inadvisable to indiscriminately discard such tests and the better course would seem to be to allow the exercise of judgment by the operator where more than forty or fifty per cent of the tests show splitting. Where only occasional tests show splitting it would be advisable to omit them. In the case of the tear deviating more than 20 degrees from the intended direction of tear the toughness of the paper also exerted considerable influence. The number of instances where it occurred, however, were so few that the omitting of the tests where it occurred would cause no hardship.

With the elimination of the factors mentioned above that might cause the variation in the average of the tests from each station there is no apparent reason why they should not check very closely and a tolerance of not more than 10 per cent might be a feasible requirement with all the types of paper considered. In the case of tests on single sheets an increase of the number of tests from five to ten or even twenty would not be seriously time consuming. Where two sheets are tested ten tests in each direction would be advisable. Where four or more sheets are used five tests in each direction is ample.

The results of these tests indicate the advisability of so choosing the number of sheets that the reading is between ten and twenty. The need of a lighter tester for tissue is evident in order to avoid using so many sheets. A heavier tester for board and exceptionally strong papers such as condenser and sand paper is also extremely desirable.

On account of the fact that only one series of tests was made with the Witham Tester and one series with the tester used by the Eastern Manufacturing Company, it is impossible to analyze the results obtained. The values obtained on different types of paper with these two instruments seem to have approximately the same relation to each other as the results obtained by the Elmendorf Tearing Tester. They do not correspond exactly, however, and before an accurate comparison can be made it would of course be necessary to have a much larger number of tests made on several instruments of each type.

Recommendations

As a result of the foregoing tests and analyses of the same, the following recommendations seem pertinent.

1. That no pains should be spared in the calibration of the instruments before leaving the factory in order to make sure they check with an accurate standard.
2. Tests should be made in a room where either accurate humidity control is possible and at a relative humidity of 65 degrees or in a room where humidity fluctuations are infrequent and where the humidity prevailing during the test is frequently ascertained. All tests made at other than 65 degrees relative humidity should be converted to a value at 65 degrees as determined by curves showing the relation between humidity and tearing strength for that particular type of paper.
3. The instrument should be level and adjusted for zero reading frequently. It should also be anchored in place so that its position does not change during use after leveling and adjusting.
4. Interference of the movement of the pointer by the paper in the clamps should be avoided. The design of the pointer may be altered to make this fool proof.
5. Movement of the pointer should be kept as free as possible and the number of sheets per test chosen to give approximately the same end point. Different operators must agree on the range.
6. With the exception of where one or two sheets are used tests in which splitting occurs should be discarded.
7. All tests should be discarded which deviate more than 20 degrees from the intended direction.
8. When four sheets or more are used per test, five tests in each direction are sufficient. When two sheets are used 10 tests in each direction are sufficient. When one sheet is used twenty tests in each direction are sufficient.
9. A lighter instrument should be available for use in testing of tissue paper and a heavier instrument for use in testing board and strong, heavy papers.

To Discontinue Pulpwood Paper Figures

WASHINGTON, D. C., June 19, 1923.—It is understood that effective July 1 the Federal Trade Commission will discontinue the collection and publication of all paper and pulp figures. Officials of the commission will not discuss the matter but an official statement will be issued in a few days.

Recent Incorporations

DU PONT CELLOPHANE COMPANY, transparent wrapping material, capital $11,000,000; incorporators C. M. Spargo, J. H. Cassidy, G. D. Hopkins, Wilmington, M. D. Fisher, Wilmington.

FRENCH PAPER COMPANY, Manhattan, New York. Capital $40,000; incorporators W. E. Husten, J. R. Widder E. Berry; attorney, The Company, 6 East 39th street, New York.

FOLDING BOX CORPORATION, Dover, Delaware, patented devices. Capital $100,000. U. S. Corporation Company.

CELLULOSE UTILITIES CORPORATION, Dover, Delaware. To conduct research and other investigations; capital, $1,000,000.

BROWN PAPER MILL COMPANY, Inc., Monroe, Louisiana, capital $1,000,000.

WESTFIELD RIVER PAPER COMPANY, Russell, Massachusetts. Capital $1,000,000.

EDWARD PAPER COMPANY, Manhattan, New York. Capital $20,000; incorporators M. and H. L. Cohn, E. A. Levey. Attorney, M. S. Cohn, 120 Broadway, New York.

OLYMPIC PAPER AND PULP COMPANY, Seattle, Washington. Capital $900,000.

AURORA PAPER PRODUCTS COMPANY, 43 State Street, Hackensack, New Jersey.—Manufacture paper products, boxes, cartons, etc. Capital $250,000.

Pulpwood Cutting Keeps Settlers Busy

Contracts have been made with a large number of settlers in Northern Ontario for the cutting of pulpwood, which is now at its height and will continue active for about eight weeks more. All wood, that is bought by contractors, must be peeled and the season is now on. Poplar is in active demand and a slightly higher price is being paid for this wood than last season. Spruce and balsam are bringing about the same figure as last Summer. There is a fair demand for pulpwood, but there is no speculative buying on the part of the mills, who are contracting only for such supplies as they can use. The market is getting steadier, but there is not likely to be any great advance in quotations for some months at any rate, according to dealers.

Treatment of Paper for Special Purposes

Scott, Greenwood & Son, London, England, have just issued a second revised and enlarged edition of "The Treatment of Paper for Special Purposes" by Louis Edgar Andes, translated from the German. The work treats of the preparation of parchment paper, preservative, papers, grained transfer papers, fireproof and unlifalsification papers, tracing and copying papers, leather papers, and colored papers, etc. The book contains one plate and forty-eight illustrations.

Although the first edition in English was issued in 1907 it has continued the most acceptable work of the kind.

The American distributors are the D. Van Nostrand Company, 8 Warren street, New York. Price $3.50 postpaid.

Memorial for Late Murray Crane

[FROM OUR REGULAR CORRESPONDENT.]

DALTON, Mass., June 25, 1923.—Charles H. Wilson has been chosen chairman of the committee of Pittsfield men appointed to collect funds for a memorial to the late Senator W. Murray Crane of Dalton. The memorial will be representative of the entire county. Other chairmen appointed to date are these: North Adams, Mayor W. K. Grier; Lee, Judge Bart Bossidy; Williamstown, Henry Sabin; Lenox, F. S. Delafield; Stockbridge, James H. Punderson; Richmond, R. C. Williams; Peru, Frank G. Creamer; Windsor, Charles H. Ball; Hinsdale, William J. Dougherty; Dalton, Edgar H. Pierce.

CURRENT PAPER TRADE LITERATURE

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

Felts

Device for Cleaning Felts of Board and Paper Machines During Operation. Wilhelm Munker. Ger. patent 359,863. *Wochbl. Papierfabr.* 54, 249 (Jan. 27, 1923). A paddle wheel device is arranged in the washing apparatus to produce agitation of the washing liquid through which the felt is passed.—J. L. P.

Stretching Device for Drying-Felts on the Paper Machine. R. Kaltschmidt and A. Kaltschmidt. Ger. patent 359,011. *Wochbl. Papierfabr.* 54, 28 (Jan. 6, 1923).—J. L. P.

Dry Felt. F. Reddaway. Can. patent 225,324, Oct. 31, 1922. The felt is made from hair fibers. It is claimed to have a much longer life than cotton felt.—A. P.-C.

Felt Guide. J. A. Divine. Can. patent 225,831, Nov. 14, 1922. A sensitizing device is interposed between a swinging roll for adjusting the felt, and the end roll over which the felt passes, so that the slight frictional contact of the edge of the felt with a taper roll is multiplied to effect the movement of the adjusting roll.—A. P.-C.

Machines

Modern Long and Cylindrical Board Machines. Eng. Hoyer. *Papierfabr.* 21, 61-63 (Feb. 4, 1923). An account of the recent development of these machines with description of four modern German ones.—J. L. P.

Modern Long and Cylinder Cardboard and Pasteboard Machines. Eng. Hoyer. *Papierfabr.* 21, 33 (Jan. 21, 1923). An account of the development of these machines.—J. L. P

Economy of High Speed Paper Machines. F. Strauch. *Papierfabr.* 21, 23-27 (Jan. 14, 1923). Polemic against F. A. Warburton in *Papierfabr.* 20, 778 (1922). Most of the data is taken from previous articles.—J. L. P.

Reasons for the Weight Variation of Paper *Pappers-Och Trävarutid. För Finland,* No. 16, 265, 1922. *Papierfabr.* 21, 21-23 (Jan. 14, 1923). The following reasons are given for the weight variation in paper: lack of uniformity in the speed of the paper machine, in the consistency of the stock and in the water pressure, errors in reading the weights of paper samples on the quadrant scale, and error in the regulating mechanism on the machine.—J. L. P.

Reclaiming Stock

Fiber Recovery from the Back-Water of Paper Mills. Victor Antoine. Ger. patent 361,189. *Wochbl. Papierfabr.* 54, 322 (Feb. 3, 1923). The back-water is conducted through two lines: the fibers suspended in the main line are collected on a mechanical screen, the fibrous suspension in the other is used again in the manufacturing process.—J. L. P.

The Waste Water Question in the Pulp, Paper and Board Industries from a Hygienic and an Economical Standpoint. A. Pritzkow. *Zellstoff u. Papier* 3, 30-37 (Feb., 1923). A very general and thorough discussion of the waste water problem covering all phases of the industry.—J. L. P.

Reclaiming Stock in Paper Mills. George D. Bearce. *Paper Trade J.* 76, No. 9, 52-53 (March 1, 1923); *Paper Mill* 47, No. 9, 10-12 (March 3, 1923); *Paper* 31, No. 20, 17-18 (March 7, 1923); *Paper Ind.* 4, 1703-1704 (March, 1923). A discussion of the importance of preventing fiber losses in mill effluent and of the reuse of white water and of various types of savealls.—A. P.-C.

Raw Materials

Bean Straw as Raw Material for Paper. H. Postl. *Wochbl. Papierfabr.* 54, 973 (April 7, 1923). It is suggested that those substances in bean straw possessing high fertilizer value be extracted by a mechanical process and that the remaining cellulosic material be used for producing paper and paper board. Bean straw contains 10.00 per cent moisture, 7.04 per cent ash, 6.19 per cent protein, 39.13 per cent crude fiber, and 35.26 per cent nitrogen-free extract.—J. L. P.

Paper from Adansonia Bast Fibers. Anon. Mitt. de. Material-prüfungsamtes zu Berlin-Dahlme. *Wochbl. Papierfabr.* 54, 973 (April 7, 1923). Recent tests, confirming earlier ones, have shown that Adansonia properly cooked yields very strong fibers. The average breaking length amounted to approximately 5,700 m. and the average folding endurance to approximately 1,700.—J. L. P.

Fibers from the Potato Plant for the Manufacture of Paper. Heinrich Eggers and Adolf Burlin. Ger. patent 370,197. *Papierfabr.* 21, 171 (Mar. 25, 1923). The washed and comminuted potato plants are cooked under a 2 to 3 atmospheres pressure in a 2 per cent caustic soda solution. After washing and disintegrating, the resulting mass is bleached in a 4 per cent to 6 per cent chloride of lime solution with continuous agitation. A treatment with sodium bicarbonate solution completes the process.—J. L. P.

Process for the Treatment of Old Paper, Pulp, Ground Wood, or Other Material Serving for the Manufacture of Paper. George Kolb. Ger. patent 370,047. *Papierfabr.* 21, 172-173 (Mar. 25, 1923). The fibrous material is suspended in water in an upright circulation tank. This is provided with a central tube to which one or more pipes are connected which discharge into the lower part of the tank. A pump or other propelling device circulates the fibrous suspension through the arrangement.—J. L. P.

The Properties of Wood in Paper Making. Bjarne Johnsen and H. N. Lee, *Pulp & Paper* 21, 111-4, 135 (Feb. 1, 1923); Paper Mill 47, No. 4, 10, 12, 46, 50 (Jan. 27, 1923); *Paper Trade J.* 76, No. 5, 53-56 (Feb. 1, 1923); *Paper Industry* 4, 1529-1532 (Feb., 1923); *Paper* 31, No. 15, 11-14 (Jan. 31, 1923). The authors discuss cord measurement density and rate of growth, chemical composition (cellulose content), decay, and seasoning, in their relation to the manufacturing process, more particularly with respect to the sulphite process.—A. P.-C.

Utilization of Decayed, Insect-Killed, or Other Inferior Wood in the Manufacture of Pulp. John S. Bates. *Pulp & Paper,* 21, 77-80 (Jan. 25, 1923). After reviewing information on this subject published recently on this continent, the author concludes as follows: In groundwood manufacture decayed wood gives a medium to high yield, but the quality of the product is poor. This method of utilization should be discouraged except for low grades and, where necessary, for ordinary grades (newsprint) in proportions up to 5 or 10 per cent. Long storage of infected groundwood should be avoided. The sulphite process gives a comparatively high yield and the quality is fairly good. This process is suitable for the production of low and medium grades (including news print sulphite). The soda process gives a rather low yield and only fair quality. The kraft process gives a medium yield and the quality of the pulp is fairly good. This process has a wider application than any of the others and the results with decayed wood may be considered favorable when the proportion is not too high. Sorting decayed wood in order to cook it separately in any of the processes would probably allow slightly higher yields and better results; but this procedure is not always feasible. In many cases good results are being obtained by feeding decayed wood in moderate proportions into the pulp mill uniformly with the sound wood. The same considerations hold true for finished pulp.—A. P.-C.

Section of the

COST ASSOCIATION OF THE PAPER INDUSTRY

Affiliated with

THE AMERICAN PAPER AND PULP ASSOCIATION

Conducted by THOS. J. BURKE, C.A., Sec-Treas

THE PAPER INDUSTRY AND ITS COST PROBLEMS

By C. A. JASPERSON, PRESIDENT, COST ASSOCIATION OF THE PAPER INDUSTRY.

Every industry has cost problems and the pulp and paper industry is no exception to this rule. It should not be thought, however, that this industry cannot properly cope with these problems which are no more difficult than those encountered in many other industries. They, too, have their different groups with each its own problems and they also in these groups have a few manufacturers who scoff at those who tell them they should install proper cost accounting systems in their mills if for no other reason than that they should be fair to their competitors. Now, what is the answer to these problems in the pulp and paper industry? My subject has been designated on the program as "Paper Industry and its Cost Problems," but I should prefer to talk about the pulp and paper industry, because the paper industry is, as we all know so well, very dependent on the pulp industry; in fact, their interests are practically tied up one with the other.

Let us take the pulp group first:

Pulp Group

The Cost Association has lately sent out to the pulp manufacturers throughout the United States Pulp Producers' Association (this method of reaching manufacturers being adopted at the request of that association) six different forms relating to ground wood, sulphite and sulphate. These forms have been drawn up for the purpose of collecting statistics relating to the conversion costs and making these different kinds of pulp—the idea being to do this on a monthly basis. Our secretary-treasurer appeared before the members of the United States Pulp Producers' Association at their meeting at the Waldorf last April and at that time suggested that an immediate start should be made in collecting these statistics. However, the members felt that it would be better to make a start by collecting statistics for the year 1922, instead of doing this on a monthly basis. The Cost Association has thus rendered the pulp manufacturers a distinct service and if they will follow up the suggestions made, feels certain that the service it will be able to render these manufacturers will prove of very great benefit to them.

Writing and Cover Group

A Standard Cost Estimate sheet has been drawn up and adopted by these groups and already a set of suppositious orders have been forwarded to writing paper manufacturers and estimates received thereon. A composite report has not yet been prepared from these estimates owing firstly, to the delay in receiving them, and secondly, to the fact that our secretary-treasurer has had to devote his time for some weeks past to preparing for this convention. This report will be completed, however, early in June.

Wrapping, Tissue and Book Groups

Forms have been prepared and will be submitted during this convention to representatives of manufacturers making these different kinds of paper, for their approval. It is hoped that the forms when finally ready and distributed by the Cost Association will be approved for use by the various trade associations, as was done in the case of the Writing Paper Manufacturers' Association. The forms will also be used in calling for estimates and suppositious orders and it is believed that the resulting reports compiled from the estimates received in reply to these requests will prove exceedingly useful to those co-operating in the work.

Uniform Cost Estimates

There seems to be a rather widespread belief in the industry that the Cost Association has a uniform cost estimate sheet which it expects all its members to adopt. This is not a fact. The Cost Association has published a Budget Cost System for paper mills in which is given an outline of what the Executive Committee of the Association believes to be the fundamentals of any sound cost estimate and cost finding system. The Cost Association does not advocate nor expect every mill in the industry to use this system. As a matter of fact, it is not an entire system and would require to be adjusted to suit the various types of mills to be found throughout the country and to be considerably amplified in the case of the larger mills. This publication has proved extremely useful and already several hundreds of copies have been sold. We are now selling this publication at $5.00 and the secretary-treasurer tells me that orders are coming in slowly but regularly which proves that there is a spreading desire in the industry for accurate information on cost matters.

Steam Costs

Owing to the necessity at this time for doing everything possible to keep down costs which are rising as we know faster than selling prices, we have arranged for two addresses to be given at this convention on "Steam Costs," because the steam cost is one of the most costly items entering into the cost of making pulp and paper and I believe is perhaps the one item which, speaking generally, could be more easily reduced than any other. There is undoubtedly a very great deal of misapprehension existing regarding steam facts. The two gentlemen who are to talk to us on this subject are both experts—one speaking from an outside public accountant standpoint and the other from an inside point of view, so that what they have to say should have a vital interest for all of us. The Cost Association is starting the collection of

statistical data relating to steam costs and will ask that a committee on steam costs be appointed at this convention. Following this we shall request the Technical Association of the Pulp and Paper Industry to co-operate with us by appointing three members to this committee to assist us by supplying any information of a technical nature which the committee may require. Forms have been drawn up for submission to this committee so that they may make an immediate start on their work which will simply be the preparation of forms to permit of the collection of statistical data relating to steam costs in such a way that it may reveal the facts quickly to mill executives regarding their steam plants and whether these plants are being run economically or otherwise.

Financial

A word before closing regarding the finances of the Cost Association. We have with us Dr. Hugh P. Baker, Executive Secretary of the American Paper & Pulp Association, who can do a great deal for the Cost Association, so I must be careful what I say in this connection. Dr. Baker, by his presence here today lends me sufficient encouragement to say what I am going to, which is that I belive the Cost Association's dues should be collected in the same manner that the American Paper & Pulp Association's dues are now being collected, which is in accordance with the plan drawn up by the Finance Committee appointed by the American Paper & Pulp Association last year. I well understand the reasons which, no doubt, actuated those who decided that it would be inadvisable this year to collect the Cost Association dues through the affiliated associations, yet our feeling is that what is "good for the goose, is good for the gander," and that if the American Paper & Pulp Association feels it is better to collect its own dues in this manner, it should not prevent the Cost Association from following its example. Certainly, from letters received we find a decided objection on the part of manufacturers to subscribe to three or four associations. Although our dues are only practically $10.00 monthly and our work is among the most important work being done to assist manufacturers to increase their profits (which after all is the vital point), yet just this fact that they are paying into two or three associations prevents quite a number of manufacturers from taking out membership in the Cost Association. This is unfortunate, and is a situation which should be corrected. The Cost Association should not be asked to compete for members with the other associations. There is another organization in no way affiliated with the American Paper & Pulp Association, owing to the fact that it has a considerable Canadian membership, which has an efficient cost bureau. A considerable amount of money has been spent in developing this bureau, but the lines along which it is working, while peculiarly suitable to one branch of the industry, cannot be said to be the most suitable method for other branches of the industry. In view of the fact that the cost data collected is necessarily of a confidential nature it would seem to be advisable for manufacturers to carefully consider to whom they are sending such confidential information. Outside agents for big fees, are doing work which could well be done by the manufacturers' on association if the manufacturers themselves would lend the necessary support both financially and morally. One of the first things these outside agencies ask for is an undertaking on the part of the manufacturer in the group to supply the information which must be collected regularly and promptly in order that the data may be prepared in a satisfactory manner. Why cannot manufacturers give such an undertaking to their association? And why cannot they pay a little more to their association to enable it to do the work in a satisfactory manner. Even so, they would in many cases, be paying at least 50 per cent less than they would to the outside agency, which of course is working for its own profit. There is also to be borne in mind the fact that the information sent is of the most confidential nature and one would imagine that the only place for such information to be sent would be to the association to which the manufacturer belongs.

COST SECTION.

General

The message I have to bring as regards the educational cost work being done in the industry is the most hopeful one the association has had to give in at any of its conventions. In every group in the industry there is a demand for more information about cost matters. Our secretary-treasurer tells me that he has a good deal more inquiries now than he had when he first joined the association about two and one-half years ago. Manufacturers are beginning to realize that the work the Cost Association is doing is vital to their interests and that they must endeavor to obtain correct costs if they are to carry on successfully. Although business is better than it was, great care has been taken not to permit a runaway market. Therefore, the margin between cost and sales prices is as narrow as ever. The only way, seemingly, that it can be enlarged is by reducing costs rather than by increasing the selling prices. It is for the Cost Association to do everything possible to assist manufacturers in their efforts to this end and we believe that a great deal can be done in this connection which should prove of increasing benefit to the pulp and paper manufacturers of this country.

Questions and Answers

The following inquiries have been received by the Cost Association:

BONUS FOR MACHINE PRODUCTS

QUESTION No. 1.—Can you give me any information as to what the practice is in mills who pay a bonus for machine products?

Answers to this question will be appreciated.

KEEPING RECORD OF PAPER SHIPPED

QUESTION No. 2.—What is best method of keeping a record of paper shipped between mills belonging to the same company?

ANSWER No. 2.—Ship to Mill A our stock on hand from Mills B and C but all of the accounting and stock records are handled in one office. We carry separate ledger accounts for the mill accounts, sub-dividing our stock accounts as you will note, between the various mills.

In our detail record, we carry a control card for each manufacturing order, and individual case numbers being used on the case slips; we use a separate color case slip for each grade of paper. Case slips accompany the Dispatcher's Order to the Shipping Department, so that paper is never specified, which has already been dispatched for shipment.

African Bamboo as Paper Making Material

Bamboo (*Arundinaria alpina*) from Kenya colony had the following composition: moisture 9.5, water soluble material 3.6, cellulose (in material as received) 47.5, cellulose (on dry basis) 52.5, ash 1.2 per cent. Length of ultimate fibers 1.6 to 2.7 mm., mostly 2.0 to 2.6, average 2.3 mm. Cooking on a laboratory scale for 7 hours at 160° C, with 16 per cent of caustic soda (on the weight of the raw material) as a 4 per cent solution gave 40 per cent of a pulp which was not completely broken up in the beater and could not be satisfactorily bleached. Using 20 per cent of caustic soda under the same conditions gave 34 per cent of a pulp of good felting qualities which could be readily broken up and furnished a pale brown paper of good strength. The pulp bleached readily (bleach consumption equal to that of soda wood pulp) (31 per cent yield on the raw material) giving a white paper of good quality. About 1.5 tons of bamboo were heated for 12 hours with an extra strong caustic soda solution (without removing the nodes) and furnished a pulp which bleached satisfactorily and yielded white paper of good quality. The yield of sized and loaded paper was 41.23 per cent on the weight of bamboo. The paper was somewhat soft, but could have been improved by longer beating. Better results would be obtained by selecting the stems and keeping those of different ages separate from one another.—A. P.-C.

FINANCIAL STATEMENTS*

An Explanation in Brief of a System for Their Analysis From the Standpoint of the Credit Grantor and the Business Executive

By Alexander Wall, Sec., Robert Morris Associates

(Concluded From Last Week)

Statement Interpretation

17. The foregoing analysis has been presented as an example of the trends and stresses that the various ratios make evident. Two examples were purposely developed in which the current ratio had little effective variation so that the effects of the other ratios could more clearly be noted.

With the possible exception of the ratio of Merchandise to Receivables all of the ratios reflect mental processes that any analyst of statements goes through in reading any statement. Their physical development is suggested for two main reasons. The first of these is because their development reduces these mental or inspirational reactions to figures which can be recorded and therefore accurately tabulated and filed. The second reason is because by recording the ratios, from year to year in a comparative manner and in connection with the property statement, the otherwise mental reactions of a series of years can be quickly and accurately recalled to mind.

The mental processes for five years for two names were produced in this example. Such an extended and detailed listing is not necessary if the ratios are regularly tabulated because the schedule of proportions which they reflect are readily read with but little effort by the experienced credit man after the first two or three efforts.

Interpretative Index

18. One very concrete reason for the present use of the current ratio, as a means of estimating the relative strength and change in position from year to year over a period, is probably due to the apparent simplicity of comparing one figure with one other figure. It is simple. It is concrete. It has been fairly effective in that it is an advance over former methods, in which no proportional studies were made. The thought has been suggested, that if a method could be devised whereby all the factors of these ratios could be combined in a reasonably rational way, an interpretative index of considerable value could be developed.

19. The first reaction from this suggestion is that the various ratios, as discussed in paragraph 13, have differing relative values and before any combination of them can be made their relative importance must be measured and a form of expressing it adopted. The computation of the whole value of the analysis as 100 per cent. would make it possible to assign a percentage of value to each ratio so that their total would equal the whole 100 per cent. This is good practice in relative statistical analysis.

20. In order to have a progressive comparison it is necessary to have some common point against which to check successive performances. This is the base from which we measure variations. In analysing the record of a company over a period of years there is a choice of selection in settling on the base to be used. First we could take the first statement of a series and measure the variation from this position as shown by the succeeding statements. Second we could take the last of a series of statements and use it as a base to determine the changes that had occurred in relation to it and which had resulted in the final condition. Third we could take the average condition for a period and estimate the separate statement standings in relation to this average. Fourth we could establish an ideal or purely arbitrary base and measure the successive performances against this.

*Presented before the Convention of the Cost Association of the Paper Industry at Cleveland, May, 1923.

21. To explain the thought behind this "Interpretative Index" the figures of the two statements have been handled on an index basis. The fluctuations of the index figure should be measured against the deductions made in the analysis developed in paragraphs 15 and 16.

Choice of Weights

22. As was said in paragraph 19 the various ratios have relatively differing values. In the application of this theory to the analysis of the two specimen statements the following scale has been selected as differentiating between the relative importance of the various ratios. These weights, however, are susceptible of change for various types of business. For example, in the jobbing business the ratios dealing with fixed assets would be of less importance than in a manufacturing business for very obvious reasons.

Current Ratio	25%
Mdse. to Rec.	5%
Worth to Fixed	10%
Sales to Rec.	15%
Sales to Mdse.	15%
Sales to Worth	5%
Worth to Debt	20%
Sales to Fixed	5%
Total	100%

This particular table means, for example, that the relation that exists between Net Worth and Debt is considered as being four-fifths as important as the Current Ratio and twice as important as the relation of Net Worth to Fixed Assets.

23. There is an inversion in two of the ratios as they were used in the first development of ratio analysis. These two inverted ratios are now listed as "Merchandise to Receivables" and "Worth to Debt." This has been done so that their effects upon the index would register in the same direction as the other ratios. For example an increasing current ratio is a betterment. An increase in the Net Worth as compared to the Total Debt is also a betterment. With the ratios as above listed any increase tends to a betterment and any decrease to a falling off, except for logical and carefully explained exceptions.

24. If we divide any one ratio by whatever base we may have developed or selected for that ratio we can at once determine what percentage of the base the ratio is. For example, if 200 be selected as a base for the current ratio then if an individual statement has a current ratio of 200 it is 100 per cent, of the base, as far as that one ratio is concerned. If the individual current ratio is 150 then its relation to a 200 base is 75 per cent.

25. In formula this would look as follows:

$$\frac{\text{Single Year Current Ratio}}{\text{Base Current Ratio}} = \text{Relative Current Ratio Strength}$$

Applied in figures to the 1918 statement of Company A, discussed in paragraph 14, in which the current ratio for 1918 is 200 and the average for the period, 203, being used as a base, this formula would be

$$\frac{200}{203} = 98\%$$

meaning that the current ratio of Company A in 1918 is 98 per cent. of the average for the period, which has been used as a base.

26. Following this procedure for each of the eight ratios for each year for both companies we would establish the following tables in percentages:

COMPANY A

	1918	1919	1920	1921	1922
Current Ratio	98	99	101	102	101
Mdse. to Rec.	107	115	103	85	89
Worth to Fixed	84	101	100	108	104
Sales to Rec.	94	100	108	92	103
Sales to Mdse.	87	86	104	106	116
Sales to Worth	103	107	103	95	91
Worth to Debt	67	77	101	114	137
Sales to Fixed	87	109	104	103	95

COMPANY B

	1918	1919	1920	1921	1922
Current Ratio	101	101	100	100	97
Mdse. to Rec.	57	78	109	120	137
Worth to Fixed	102	120	109	88	79
Sales to Rec.	89	85	105	109	110
Sales to Mdse.	144	102	91	86	75
Sales to Worth	98	102	111	103	83
Worth to Debt	107	91	84	80	85
Sales to Fixed	100	122	121	90	66

These two scales or tables mean that each ratio, in the year at the column head bears the indicated percentage relationship recorded in that column, to the base which was the average of the ratio for the period.

For example: The average of the five ratios of Sales to Merchandise of Company B, for the five years of the study, is 567 per cent. (see last column table of ratios below Company B, paragraph 14, last column fifth line). In 1921 the ratio of Sales to Merchandise was 490 per cent. (see same table fourth column, fifth line). Dividing 490, the yearly ratio, by 567, the average base ratio, produces 86 per cent., meaning that this ratio in 1921 is 86 per cent. as strong as the average.

27. In paragraph 22 a series of weights or relative values of the ratios was listed. If these weights or values be multiplied by the percentage of average for both companies that appear in paragraph 25, the following table will be developed.

RATIO INDEX VALUES—COMPANY A

	1918	1919	1920	1921	1922
Current Ratio	24.50	24.75	25.25	25.50	25.00
Mdse. to Rec.	5.35	5.75	5.15	4.25	4.45
Worth to Fixed	8.40	10.10	10.00	10.80	10.40
Sales to Rec.	14.10	15.00	16.20	13.80	15.45
Sales to Mdse.	13.05	12.90	15.60	15.90	17.40
Sales to Worth	5.15	5.35	5.15	4.75	4.55
Worth to Debt	13.40	15.40	20.20	22.80	27.40
Sales to Fixed	4.35	5.45	5.20	5.15	4.75
Total or index	88.30	94.70	102.75	102.95	109.40

RATIO INDEX VALUES—COMPANY B

	1918	1919	1920	1921	1922
Current Ratio	25.25	25.25	25.00	25.00	24.25
Mdse. to Rec.	2.85	3.90	5.45	6.00	6.85
Worth to Fixed	10.20	12.00	10.90	8.80	7.90
Sales to Rec.	13.35	12.75	15.75	16.35	16.50
Sales to Mdse.	21.60	15.30	13.65	12.90	11.25
Sales to Worth	4.90	5.10	5.55	5.15	4.15
Worth to Debt	21.40	18.20	16.80	16.00	17.00
Sales to Fixed	5.00	6.10	6.05	4.50	3.30
Total or index	104.55	98.60	99.15	94.70	91.20

28. Measured by the Current Ratio alone neither of these companies show a very great deviation as has been shown by the discussion in paragraphs 15 and 16, but a marked trend is shown by the index, explained in paragraphs 22-27, using a related weighting of all the ratios. This is an example of the effect of the other ratios in the face of a fairly stable current ratio.

29. The explanation has been detailed and because of this detail has perhaps appeared complex. With the foregoing principles understood we can use the following formula to produce an index figure.

Index Table Formula

$$\frac{\text{Single year Current Ratio}}{\text{Base Current Ratio}} \times \text{Weight} = \text{Current Ratic Index Value}$$

$$\frac{\text{Single year Mdse. to Rec.}}{\text{Base Mdse. to Rec.}} \times \text{Weight} = \text{Mdse. to Rec. Index Value}$$

$$\frac{\text{Single year Worth to Fixed}}{\text{Base Worth to Fixed}} \times \text{Weight} = \text{Worth to Fixed Volue}$$

$$\frac{\text{Single year Worth to Debt}}{\text{Base Worth to Debt}} \times \text{Weight} = \text{Worth to Debt Index Value}$$

$$\frac{\text{Single year Sales to Rec.}}{\text{Base Sales to Rec.}} \times \text{Weight} = \text{Sales to Rec. Index Value}$$

$$\frac{\text{Single year Sales to Mdse.}}{\text{Base Sales to Mdse.}} \times \text{Weight} = \text{Sales to Mdse. Index Value}$$

$$\frac{\text{Single year Sales to Worth}}{\text{Base Sales to Worth}} \times \text{Weight} = \text{Sales to Worth Index Value}$$

$$\frac{\text{Single year Sales to Fixed}}{\text{Base Sales to Fixed}} \times \text{Weight} = \text{Sales to Fixed Index Value}$$

$$\text{Index} = \text{Total}$$

30. Applied to the last statement of Company B, 1922, using the average of each ratio as a base this formula, filled out, would look as follows:

$$\frac{195}{201} \times 25 = 24.25 \quad \text{Current Ratio Value}$$

$$\frac{124}{90} \times 5 = 6.85 \quad \text{Mdse. to Rec. Value}$$

$$\frac{104}{131} \times 10 = 7.90 \quad \text{Worth to Fixed Value}$$

$$\frac{83}{97} \times 20 = 17.00 \quad \text{Worth to Debt Value}$$

$$\frac{534}{483} \times 15 = 16.50 \quad \text{Sales to Rec. Value}$$

$$\frac{427}{567} \times 15 = 11.25 \quad \text{Sales to Mdse. Value}$$

$$\frac{278}{332} \times 5 = 4.15 \quad \text{Sales to Worth Value}$$

$$\frac{291}{440} \times 5 = 3.30 \quad \text{Sales to Fixed Value}$$

Total = 91.20 or Index

31. To compute this index, once the ratios have been prepared, takes less than six minutes per statement by use of a computing machine such as in the office of many banks. Sufficient accuracy can be secured by use of a slide rule in about the same time.

To compute the eight ratios from a regular comparison sheet takes less than four minutes, sometimes less than three minutes, per statement after the figures are spread upon a regular comparison sheet.

32. The concrete advantage of the ratio method of analysis is that it produces definite proportional reactions that can be tabulated and read in comparison with previous definite proportions similarly developed. They have a statistical value in that, because of their definite method of development, they may be combined into an index, if that be desired.

33. Industries are very largely affected by similar economic changes. We hear of the steel industry booming or the lumber industry stagnant. The automobile industry, as a whole concrete thing, is held up to criticism or condemnation. Tanners, as a class, are affected by changes in hide market values. Department stores report good or bad holiday trade. Everywhere we find people speaking of industries by groups. Type by groups is acknowledged in everyday conversation, both personal and highly statistical. The question arises—Why not statement analysis by groups?

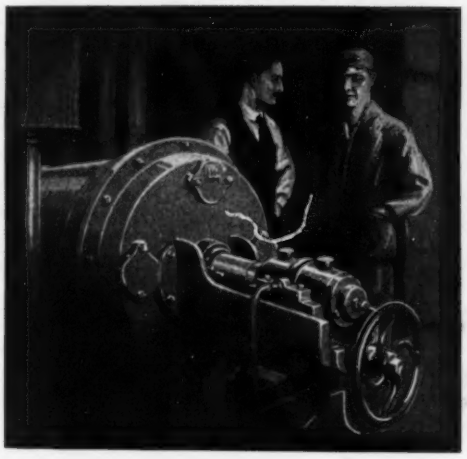
34. Already a sufficient experimentation has been made to make moderately certain as a fact the once estimate:

That groups of statements in similar lines will have certain characteristics because they are largely controlled by the action of the law of supply and demand upon the same basic raw materials and also upon the finished product.

35. If an industry be improving and operating under profitable economic conditions the effect of this will be noticeable in the proportions of a combined statement made up of the many separate statements of the trade or a well selected list. Within an industry

(*Continued on page 64*)

COST SECTION



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Imports and Exports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING JUNE 23, 1923

SUMMARY

News Print.....562 bls., 1,962 rolls.
Packing Paper.....944 bls., 614 rolls.
Wrapping Paper.....370 bls., 112 rolls.
Kraft Paper.....5,310 rolls, 6,724 bls.
Cigarette Paper.....2,121 cs.
Filter Paper.....20 cs.
Wall Paper.....923 rolls, 9 bls., 1 cs.
Hangings.....25 bls., 9 cs.
Drawing Paper.....6 cs.
Coated Paper.....63 cs.
Colored Paper.....7 cs.
Printing Paper.....88 cs., 104 rolls.
Writing Paper.....5 cs.
Parchment Paper.....86 rolls.
Tissue Paper.....11 cs.
Litho Paper.....30 cs.
Photo Paper.....3 cs.
Miscellaneous Paper.....154 cs., 201 bls.

CIGARETTE PAPER

The Surburg Co., Lafayette, Havre, 11 cs.
Liggett & Myers Tobacco Co., by same, 20 cs.
M. Spiegel & Son, Inc., America, Genoa, 26 cs.
M. Spiegel & Son, Inc., Conte Verdi, Genoa, 79 cs.
Rose & Frank, Liberty, Havre, 160 cs.
Wilkinson Bros. & Co., Paris, Havre, 5 cs.
P. J. Schweitzer, Skipsea, Marseilles, 25 cs.
American Tobacco Co., Collamer, Bordeaux, 850 cs.
Gluckmann & Strauch, by same, 9 cs.
De Manduit Paper Corp., Collamer, St. Nazaire, 336 cs.
R. J. Reynolds Tobacco Co., by same, 600 cs.

FILTER PAPER

H. Reeve Angel & Co., Venusia, London, 2 cs.
H. Reeve Angel & Co., Berengaria, Liverpool, 1 cs.
H. Reeve Angel & Co., Menominee, London, 14 cs.
Atlantic Forwarding Co., Suffren, Havre, 3 cs.

WALL PAPER

The Prager Co., Manchuria, Hamburg, 923 rolls.
Nat'l City Bank, Tyrrhenia, Hamburg, 2 bls.
R. F. Downing & Co., Menominee, London, 4 bls.
R. F. Downing & Co., by same, 1 cs.
A. Murphy & Co., Cedric, Liverpool, 3 bls.

PAPER HANGINGS

W. H. S. Lloyd & Co., Cedric, Liverpool, 6 bls.
W. H. S. Lloyd & Co., Menominee, London, 19 bls.
W. H. S. Lloyd, by same, 9 cs.

DRAWING PAPER

H. Reeve Angel & Co., Menominee, London, 5 cs.
Keuffel & Esser, Cedric, Liverpool, 1 cs.

COATED PAPER

Globe Shipping Co., Yorck, Bremen, 56 cs.
Gevaert Co. of America, Lapland, Antwerp, 7 cs.

COLORED PAPER

E. Ducher, Lapland, Antwerp, 7 cs.

KRAFT PAPER

Republic Bag & Paper Co., Orduna, Hamburg, 1,611 rolls.
Republic Bag & Paper Co., by same, 4,360 bls.
M. O'Meara Co., by same, 710 rolls.
M. O'Meara Co., by same, 183 bls.
Int'l Acceptance Bank, Yorck, Bremen, 1,553 bls.
Int'l Acceptance Bank, by same, 509 rolls.
Wilkinson Bros. & Co., by same, 1,520 rolls.
Wilkinson Bros. & Co., by same, 305 bls.
Equitable Trust Co., by same, 323 bls.
Equitable Trust Co., by same, 960 rolls.

WRAPPING PAPER

C. Steiner, Yorck, Bremen, 7 bls.
Wilkinson Bros. & Co., Inc., Topdalsfjord, Bergen, 357 bls.
Melby, Kuttroff & Co., by same, 6 bls.
Melby, Kuttroff & Co., by same, 112 rolls.

PACKING PAPER

Republic Bag & Paper Co., Orduna, Hamburg, 138 rolls.
Mischell & Williams, Columbia, Trieste, 476 rolls.
Mischell & Williams, by same, 518 bls.
Ladenburg, Thalman & Co., by same, 436 bls.

NEWS PRINT

M. O'Meara Co., Columbia, Trieste, 269 bls.
Parsons & Whittemore, Pr. Roosevelt, Bremen, 187 bls.
Parsons & Whittemore, by same, 1,190 rolls.
H. Reeve Angel & Co., Pr. Roosevelt, Bremen, 372 rolls.
Chemical Nat'l Bank, Orduna, Hamburg, 281 rolls.
Corn Exchange Bank, Manchuria, Hamburg, 69 rolls.
M. O'Meara Co., Topdalsfjord, Sarpsborg, 106 bls.

PRINTING PAPER

Perkins, Goodwin & Co., Esther Dollar, Genoa, 17 cs.
Perry, Ryer & Co., Tuscania, Glasgow, 58 cs.
B. F. Drakenfeld & Co., Baltic, Liverpool, 13 cs.
Chemical Nat'l Bank, Manchuria, Hamburg, 104 rolls.

WRITING PAPER

C. Steiner, Pr. Roosevelt, Bremen, 5 cs.

PARCHMENT PAPER

F. C. Strype, Lapland, Antwerp, 66 rolls.
Irving Bank, Columbia Trust Co., by same, 20 rolls.

TISSUE PAPER

F. C. Strype, Baltic, Liverpool, 1 cs.
Meagher, Devon Co., Cedric, Liverpool, 10 cs.

LITHO PAPER

Ault & Wiborg Co., Slavic Prince, Hongkong, 5 cs.
J. H. & G. B. Siebold, by same, 25 cs.

PHOTO PAPER

American Shipping Co., Ryndam, Rotterdam, 3 cs.

PAPER

Rose & Frank, Paris, Havre, 16 cs.
F. L. Kramer & Co., Menominee, London, 9 cs.
H. Brockelbank, by same, 14 cs.
Perry, Ryer & Co., Cameronia, Glasgow, 9 cs.
Wilkinson Bros. & Co., Inc., Orduna, Hamburg, 201 bls.
Hensel, B. & Lorbacher, by same, 22 cs.
C. M. Mendenhall, Lafayette, Havre, 2 cs.
Whiting & Patterson, by same, 8 cs.
Hensel, B. & Lorbacher, Manchuria, Hamburg, 2 cs.
Japan Paper Co., America, Genoa, 82 cs.

RAGS, BAGGING, ETC.

Katzenstein & Keene, Elmsport, Rotterdam, 44 bls. rags.
Katzenstein & Keene, E. Dawn, Rotterdam, 221 bls. rags.
Katzenstein & Keene, Sarcoxie, Bordeaux, 168 bls. rags.
Katzenstein & Keene, Tuscania, Glasgow, 83 bls. rags.
Katzenstein & Keene, Cameronia, Glasgow, 85 bls. rags.
State Bank, by same, 44 bls. paper stock.
State Bank, S. F. Maru, Genoa, 42 bls. picker waste.
L. H. Abenheimer, Suffren, Havre, 107 bls. rags.
Atlantic Waste Material Co., Venusia, London, 20 bls. rags.
E. J. Keller Co., Inc., Hessen, Hamburg, 31 bls. rags.
R. Levine, Manchuria, Hamburg, 11 bls. rags.
Chemical Nat'l Bank, Tyrrhenia, Hamburg, 953 bls. rags.
New York Trust Co., Yorck, Bremen, 227 bls. rags.
Chemical Nat'l Bank, by same, 226 bls. rags.
Int'l Acceptance Bank, by same, 96 bls. rags.
Stone Bros., Menominee, London, 85 bls. paper stock.
U. S. Lines, Pr. Roosevelt, Bremen, 227 bls. rags.
Irving Bank, Columbia Trust Co., Lapland, Antwerp, 63 bls. flax waste.
Royal Manfg. Co., Liberty, Dunkirk, 42 bls. rags.
D. M. Hicks, by same, 30 bls. cotton waste.
L. H. Abenheimer, Liberty, Havre, 595 bls. rags.
American Express Co., by same, 43 bls. rags.
Goldman, Sachs & Co., Collamer, St. Nazaire, 108 bls. rags.
N. Frank, Sons, King City, Hamburg, 29 bls. rags.
Castle & Overton, Ryndam, Rotterdam, 33 bls. rags.
M. O'Meara Co., Ryndam, Rotterdam, 33 bls. cotton waste.
Irving Bank, Columbia Trust Co., Caronia, Liverpool, 23 bls. rags.
Ayres, Oddy & Co., E. Dollar, Genoa, 44 bls. cotton waste.

OLD ROPE

E. J. Keller Co., Inc., Liberty, Havre, 122 bales.
Brown, Bros. & Co., Collamer, St. Nazaire, 23 coils.
Brown Bros. & Co., Ryndam, Rotterdam, 61 coils.
Brown Bros. & Co., Hansa, Hamburg, 96 coils.
Brown Bros. & Co., Menominee, London, 215 coils, 24 bales.
Brown Bros. & Co., Francisco, Hull, 195 coils, 26 bales.
Int'l Acceptance Bank, by same, 94 coils.
American Exchange Nat'l Bank, Tyrrhenia, Hamburg, 57 coils.
L. H. Abenheimer, Orduna, Hamburg, 18 coils.
Int'l Acceptance Bank, Cameronia, Glasgow, 46 coils.
Ellerman, Wilson Line, Berengaria, Liverpool, 20 coils.
N. Y. Cordage Co., Lapland, Antwerp, 316 coils.
Brown Bros. & Co., by same, 117 coils.
Brown Bros. & Co., Venusia, London, 114 coils.

WOOD PULP

J. Anderson & Co., Topdalsfjord, Kristiania, 2,110 bls. sulphite pulp.
Guaranty Trust Co., by same, 2,000 bls. sulphite pulp.
Nilsen, Lyon & Co., Inc., Pr. Roosevelt, Bremen, 300 bls., 50 tons sulphite pulp.
Bulkley, Dunton & Co., by same, 500 bls., 100 tons, sulphite pulp.
M. Gottesman & Co., Inc., by same, 2,100 bls., 210 tons wood pulp.
Castle & Overton, by same, 990 bls., 198 tons wood pulp.
Castle & Overton, Yorck, Bremen, 665 bls. wood pulp.
American Wood Pulp Corp., by same, 75 bls. wood pulp.
Whalen Pulp & Paper Mills, Sagadahoc, Vancouver, B. C., 3,400 bls. wood pulp.
Hudson Trading Co., King City, Hamburg, 586 bls., 89 tons wood pulp.

WOOD FLOUR

B. L. Soberski, Topdalsfjord, Kristiania, 1,950 bags.
Innes, Spieden & Co., Orduna, Hamburg, 302 bags.
A. Kramer & Co., by same, Hamburg, 486 bags.

CASEIN

The Kalbfleisch Corp., A. Legion, Buenos Aires, 1,000 bags.
First Nat'l Bank of Boston, Leighton, Buenos Aires, 751 bags.
A. Klipstein & Co., Manchuria, Hamburg, 134 bags.
Jungmann & Co., Manchuria, Hamburg, 250 bags.
Bank of America, Venusia, London, 333 bags.
A. Hurst & Co., Berengaria, Liverpool, 60 bbls.
A. Hurst & Co., Collamer, Bordeaux, 110 bags.
Atterbury Bros., Inc., by same, 248 bags.
E. B. Muns, Collamer, St. Nazaire, 198 bags.
A. Hurst & Co., Maryland, London, 100 bags.
A. Klipstein & Co., Arcturus, Bombay, 297 bags.
A. Klipstein & Co., C. Constructor, Auckland, 350 bags.
Bankers' Trust Co., C. Constructor, Wellington, 630 bags.
Irving Bank, Columbia Trust Co., Vandyck, Buenos Aires, 417 bags.

CHINA CLAY

English China Clay Sales Corp., Watsness, Forney, bulk, 1,048 tons, 18 cwt.
Moore & Munger, by same, bulk, 514 tons, 2 cwt.

(*Continued on page 64*)

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110 E. 42nd Street
NEW YORK

New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, June 27, 1923.

Although buying in primary channels has generally shown a continued falling off during the past week in the business world retail demand has expanded. This same condition was particularly noticeable in the paper market, which although it continued dull, failed to show the decided falling off because of seasonal dullness. Dealers and manufacturers still have enough business to keep them in town and vacations throughout the industry are being pretty generally postponed.

One topic which is causing considerable comment in trade circles is the labor situation in Scandinavia. There are few importers with such short memories that they do not recall what happened a few months ago when the Swedish pulp mill workers decided to strike. Word now comes that the Norwegian pulp workers have called a strike and the news is causing considerable anxiety.

If the strike proves to be of long duration some inconvenience may be caused, but with the Swedish mills working at top speed to make up for the time they lost during the strike and domestic mills ready to throw extra production into the market in case of any shortage there appears to be little danger of actual hardship.

The amount of pulp that will be lost by the strike is not in excess of 20,000 tons of chemical grades and 17,500 tons of ground wood. About 8,500 tons of the chemical is bleached, 10,000 unbleached and 2,000 kraft. It must be remembered, however, that all of this tonnage was not destined for trade in the United States.

With the calling of the strike in Norway came the settlement of the labor troubles in Belgium among rag packers which will undoubtedly mean that there will be larger quantities of foreign rags available for shipment to this country. It is doubtful whether this will have any direct influence on the local market immediately since there is not a very heavy demand for foreign rags here at the present time. In addition to this fact the European and British mills are eager to take up all of the rag stock they can lay their hands on, and exporters in Belgium will doubtless find a more profitable business there.

In the fine paper market things continued pretty constant. There were no price changes worthy of mention and trading went along at about the same rate without much change in either direction. Manufacturers are not inclined to tempt buyers much at this time since they are taking inventory and overhauling their mills. The mills that are after business, however, report that they have all of the orders they can handle and dealers say that trading on the open market is jogging along at a steady pace.

Book paper is slowing down with the season, but prices remain the same. While the summer dullness is plainly indicated in the condition of this market, dealers and manufacturers seem to think that business is better than they have any right to expect at this season of the year. Little change in quotations is anticipated at this time by manufacturers.

The first sign of news print yielding to the seasonal slowness became apparent last week when a slight falling off was noticed in sheets on the open market. Beyond this there were no changes. The mills still continue to run at capacity although they are not buying quite so far ahead in so far as raw materials are concerned. It is thought that the strike conditions in Norway may tend to strengthen prices even more than they have been by the local demand for news, but it is too early as yet to say positively what the effect will be.

Tissues also began to show symptoms of falling off. There was some softening of the demand, but dealers report that it is slight and that they do not expect it to last for more than thirty days at the most. The mills are still busy filling contracts that they have made during the past month and trading in the open market, while it had slackened somewhat, still continued good. This early slackening came a little before it was expected and authorities in the trade say that they can therefore expect it to lift a little sooner than usual.

Coarse papers are not in quite such good demand as the other articles in the market and the summer dullness has hit them probably a little harder than the other grades. In spite of this there is considerable business being done both in the open and in the futures market.

Board is exceptionally good for this time of year. Two weeks ago it was suffering from an attack of depression and prices softened, but now the mills report a better business, and it is confidently predicted that prices will go to a slightly higher level.

Mechanical Pulp

The reaction of the ground wood market to the strike in Norway was immediate last week. There was a general stiffening all around and the buyers, while still disinclined to come into the market for any considerable amounts, began to show signs of anxiety. It is thought that next week will see a considerable livening of the demand and if the northern states do not get some good rains to remedy a threatened low water condition, it is just possible that the situation may become acute.

Chemical Pulp

The chemical pulp market did not show such instant signs of the effect of the Norwegian strike. Prices became a little firmer but did not rise to any higher levels. It is obvious that the labor trouble will influence the local market unless it is settled immediately. Buyers still held off last week and trading in the spot market was slow with contracts also showing a good deal of languor.

Old Rope and Bagging

Old rope and bagging showed a little more life in the higher grades during the week, but the lower ones are still quiet. The mills are not showing great interest in any of them, but dealers report some improvement in all grades. They say that they expect a marked change for the better within thirty days.

Rags

The rag market is still dull in all quarters. Packers say that there has been a slight improvement and that the mills are here and there showing an inclination to buy for the future. A few more carloads moved on the open market this week, but on the whole there are large quantities in the warehouses with few takers. Roofing mills are still running slackly and this is keeping the lower grades dull.

Waste Paper

No change of any consequence occurred in the waste paper market during the week. It is still rather quiet with trading on the open market spotty. Although there have been a few price changes they have been confined to isolated grades and have not been indicative of any great market trend.

Twine

The steady demand which has been keeping up in the twine market dissolved in the heat last week and things are moving slowly in all grades now. Although it was thought that there would be some falling off in price none has as yet occurred.

All the digesters of the Mattagami Pulp and Paper Company at Smooth Rock Falls are running to capacity. The output is now about hundred and fifty tons a day. William Ellis, formerly with the International Paper Company at Niagara Falls, N. Y., is now superintendent of the Mattagami plant.

Market Quotations

Paper Company Securities

New York Stock Exchange closing quotations June 26, 1923.

	BID	ASKED
American Writing Paper Company, pref.	15	16
International Paper Company, com.	37	37¼
International Paper Company, pref., stamped	66½	69
Union Bag & Paper Corporation	65½	66

Paper

F. o. b. Mill.

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@30.00
Superfine	14.00	@30.00
Tub Sized	10.00	@15.00
Engine Sized	8.00	@11.00
News—f. o. b. Mill—		
Rolls, contract	3.80	@ 4.00
Rolls, transit	4.00	@ 4.25
Sheets	4.25	@ 4.50
Side Runs	3.50	@ 4.15
Book, Cased—f. o. b. Mill		
S. & S. C.	7.25	@ 9.00
M. F.	7.00	@ 8.75
Coated and Enamel	9.00	@14.00
Lithograph	9.00	@14.00
Tissues—f. o. b. Mill		
White No. 1	.90	@ 1.00
White No. 2	.85	@ .95
Colored	1.15	@ 2.00
Anti-Tarnish	1.50	@ 2.00
Kraft	.95	@ 1.15
Manila	.85	@ .95
Kraft—f. o. b. Mill—		
No. 1 Domestic	7.00	@ 7.50
No. 2 Domestic	5.50	@ 6.00
Imported	6.50	@ 7.00
Screenings	3.25	@ 3.50
Manila—		
No. 1 Jute	8.50	@ 9.00
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.50
No. 2 Wood	4.00	@ 4.50
Butchers	4.25	@ 4.75
Fibre Papers—		
No. 1 Fibre	6.00	@ 6.25,
No. 2 Fibre	5.25	@ 5.50
Common Bogus	3.50	@ —
Card Middies	4.00	@ 5.00
Boards—per ton—		
News	59.50	@61.00
Straw	61.00	@64.00
Chip	59.50	@62.00
Binders' Boards	80.00	@83.00
Sgl. Mla. L.I. Chip	78.00	@83.00
Wood Pulp	72.00	@78.00
Container	75.00	@82.00
Wax Paper—		
Self Sealing White 28 and 30 lb. basis	11.00	@12.00
Waxed Tissue	1.56	@ 1.65
Glassine—		
Bleached, basis 25 lbs.	15.00	@16.00
Bleached, basis 20 lbs.	17.00	@18.00
Papermakers' Felts per ton—		
Dry	75.00	@85.00
Saturated	65.00	@75.00
Sheathing Paper, per ton—		
Rosin Sized (red and gray, 30 lbs. per 500 sq. ft.)	55.00	@65.00

Mechanical Pulp

(Ex-Dock)

No. 1 Imported	35.00	@40.00
(F. o. b. Mill)		
No. 1 Domestic	35.00	@40.00

Chemical Pulp

(Ex-Dock, Atlantic Ports.)

Sulphite (Imported)—		
Bleached	4.50	@ 5.00
Easy Bleaching	3.50	@ 3.75
No. 1 strong unbleached	3.30	@ 3.50
No. 2 Strong unbleached	2.85	@ 3.10
No. 1 Kraft	3.25	@ 3.40
Sulphate—		
Bleached	4.00	@ 4.15
(F. o. b. Pulp Mill.)		
Sulphite (Domestic)—		
Bleached	4.50	@ 5.00
Strong unbl'chd	3.10	@ 3.30
Easy Bleaching Sulphite	3.25	@ 3.50
News Sulphite	3.00	@ 3.25
Mitscherelich	3.20	@ 3.30
Kraft (Domestic)	2.10	@ 3.30
Soda Bleached	4.25	@ 4.35

Domestic Rags

New

Prices to Mill, f. o. b. N. Y.

Shirt Cuttings—		
New White, No. 1	12.25	@12.75
New White, No. 2	5.50	@ 6.25
Silesias, No. 1	7.00	@ 7.50
New Unbleached	10.25	@10.75
Washables	4.50	@ 5.00
Fancy	5.50	@ 6.00
Cotton—according to Grades—		
Blue Overall	7.00	@ 7.50
New Blue	4.25	@ 5.00
New Black Soft	4.25	@ 4.75
New Light Seconds	2.75	@ 3.00
O. D. Khaki Cuttings	4.25	@ 4.50
Men's Corduray	3.00	@ 3.50
New Canvas	6.50	@ 7.00
New Black Mixed, Old	2.50	@ 2.70
White, No. 1—		
Repacked	5.50	@ 6.00
Miscellaneous	4.75	@ 5.25
White, No. 2—		
Repacked	3.25	@ 3.75
Miscellaneous	2.75	@ 3.00
St. Soiled, White	1.90	@ 2.10
Thirds and Blues—		
Repacked	2.35	@ 2.60
Miscellaneous	1.90	@ 2.15
Black Stockings	2.75	@ 3.00
Roofing Rags—		
Cloth Strippings	1.15	@ 1.25
No. 1	1.15	@ 1.25
No. 2	1.05	@ 1.15
No. 3	.80	@ .90
No. 4	.80	@ .90
No. 5A	1.00	@ 1.10

Foreign Rags

New Light Silesias	6.00	nominal
Light Flannelettes	6.75	nominal
Unbl'chd Cottons	7.50	nominal
New White Cuttings	9.50	nominal
New Light Oxfords	6.00	nominal
New Light Prints	4.50	nominal
New Mixed Cuttings	2.00	@ 2.50
New Dark Cuttings	1.90	@ 2.10
No. 1 White Linens	10.00	nominal
No. 2 White Linens	6.50	nominal
No. 3 White Linens	5.00	nominal
No. 4 White Linens	3.50	nominal
Old Extra Light Prints	2.00	nominal
Ord. Light Prints	1.75	nominal
Med. Light Prints	1.50	nominal
Dutch Blue Cotton	1.85	@ 2.15
German Blue Cottons	1.65	nominal
Ger. Blue Linens	3.50	nominal
Checks and Blues	1.50	nominal
Dark Cottons	1.30	@ 1.35
Shoppery	1.00	@ 1.05
French Blues	1.75	@ 2.00

Bagging

Prices to Mill f. o. b. N. Y.

Gunny No. 1—		
Foreign	1.10	@ 1.20
Domestic	1.10	@ 1.20
Wool, Tares, light	1.30	@ 1.40
Wool, Tares, reavy	1.30	@ 1.40
Bright Bagging	1.05	@ 1.20
Sound Bagging	.85	@ .95
Manila Rope—		
Foreign	5.90	@ 6.15
Domestic	6.15	@ 6.35
New Bu. Cut	2.15	@ 2.25
Hessian Jute Threads—		
Foreign	2.00	@ 2.25
Domestic	2.00	@ 2.10
Mixed Strings	1.00	@ 1.10

Twines

Cotton—(F. o. b. Mill)		
No. 1	.35	@ .37
No. 2	.31	@ .33
No. 3	.37	@ .39
India, No. 6 basis—		
Light	.20	@ .21
Dark	.19	@ .20
B. C., 18 basis	.41	@ .42
A. B. Italian, 18 Basis	.51	@ .61
Finished Jute—		
Dark, 18 basis	.29	@ .30
Light, 18 basis	.26	@ .27
Jute Wrapping, 3-6 Ply—		
No. 1	.23	@ .24
No. 2	.21	@ .22
Tube Rope—		
4-ply and larger	.15	@ .17
Fine Tube Yarn—		
5-ply and larger	.19	@ .21
4-ply	.20	@ .22
3-ply	.20	@ .22
Unfinished India—		
Basis	.16	@ .17
Paper Makers Twine Balls	.13	@ .15
Box Twine, 2-3 ply	.18	@ .19
Jute Rope	.17	@ .20
Amer. Hemp, 6	.33	@ .35
Sisal Hay Rope—		
No. 1 Basis	.15	@ .17
No. 2 Basis	.13	@ .15
Sisal Lath Yarn—		
No. 1	.14	@ .15
No. 2	.11	@ .13
Manila Rope	.18	@ .19

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	4.00	@ 4.20
Hard, White, No. 2	3.40	@ 3.70
Soft, White, No. 1	3.30	@ 3.50
Flat Stock—		
Stitchless	1.95	@ 2.05
Over Issue Mag.	1.95	@ 2.05
Solid Flat Book	1.85	@ 1.95
Crumpled No. 1	1.40	@ 1.50
Solid Book Ledger	2.70	@ 2.90
Ledger Stock	1.90	@ 2.10
New B. B. Chips	.85	@ .95
Manilas—		
New Env. Cut	2.50	@ 2.75
New Cut No. 1	2.00	@ 2.25
Extra No. 1 old	1.70	@ 1.80
Print	1.15	@ 1.25
Container Board	1.00	@ 1.10
Bogus Wrapper	.90	@ 1.00
Old Krafts, machine compressed Bales	2.10	@ 2.20
News—		
No. 1 White News	2.00	@ 2.10
Strictly overissue	1.15	@ 1.20
Strictly Folded	.90	@ 1.00
No. 1 Mixed Paper	.75	@ .85
Common paper	.50	@ .60

CHICAGO

[FROM OUR REGULAR CORRESPONDENT.]

Paper

F. o. b. Mill

All Rag Bond	35	@ 40
No. 1 Rag Bond	30	@ 35
No. 2 Rag Bond	18	@ 25
Water Marked Sulphite	10	@ 14
Sulphite Bond	9	@ 12
Sulphite Ledger	11	@ 14
Superfine Writing	18	@ 24
No. 1 Fine Writing	14	@ 22
No. 2 Fine Writing	12	@ 20
No. 3 Fine Writing	9	@ 12
No. 1 M. F. Book	6¾	@ 7
No. 1 S. & S. C. Book	7	@ 7¼
Coated Book	9	@ 10¼
Coated Label	9	@ 10
News—Rolls mill	4	@ 4½
News—Sheets, mill	4¼	@ 4¾
No. 1 Manila	4¾	@ 6
No. 1 Fibre	5¼	@ 5¾
No. 2 Manila	4½	@ 5
Butchers' Manila	4	@ 4½
No. 1 Kraft	7	@ 7½
No. 2 Kraft	6½	@ 7
Wood Tag Boards	5	@ 5½
Screenings	5	@ 5½
Boards, per ton—		
Plain Chip	60.00	@65.00
Solid News	65.00	70.00
Manila Lined Chip	70.00	@72.50
Container Lined—		
85 Test	75.00	@80.00
100 Test	80.00	@85.00

Old Papers

F. o. b. Chicago

Shavings—		
No. 1 Hard White	3.75	@ 3.90
No. 1 Soft Shav.	3.50	@ 3.60
No. 1 Mixed	1,65	@ 1.75
No. 2 Mixed	1.50	@ 1.60
White Envel. Cuttings	3.60	@ 3.75
Ledgers and writings	2.00	@ 2.10
Solid Books	2.00	@ 2.10
No. 1 Books, Light	1.75	@ 1.85
Blanks	2.00	@ 2.15
Ex. No. 1 Manila	2.00	@ 2.15
Manila Envelope Cuttings	2.50	@ 2.60
No. 1 Manilas	1.50	@ 1.60
Folders News (over issue)	1.30	@ 1.40
Old Newspaper	1.15	@ 1.20
Mixed Papers	.70	@ .75
Straw Clippings	1.00	@ 1.10
Binders Clippings	1.00	@ 1.10
Kraft	2.40	@ 2.50
New Kraft Cuts	2.60	@ 2.70
Roofing Stock, f. o. b. Chicago, Net Cash—		
No. 1	32.00	@ —
No. 2	30.00	@ ..
No. 3	38.00	@ —
No. 4	28.00	@ —

PHILADELPHIA

[FROM OUR REGULAR CORRESPONDENT.]

Paper

Bonds	.10	@ .60
Ledgers	.15	@ .40
Writings—		
Superfine	.15	@ .20
Extra fine	.12	@ .22
Fine	.20	@ .30
Fine, No. 2	.20	@ .25
Fine, No. 3	.15	@ .20
Book, M. F.	.06	@ .11
Book, S. S. & C.	.08	@ .15
Book, Coated	.08	@ .15
Coated Lithograph	.10	@ .15
Label	.08	@ .15
News	.05	@ .07
No. 1 Jute Manila	.12	@ .13
Manila Sul., No. 1	.08	@ .10
Manila No. 2	.07½	@ .08
No. 2 Kraft	—	@ .10
No. 1 Kraft	—	@ .11
Common Bogus	.02½	@ .03
Straw Board	75.00	@85.00
News Board	65.00	@70.00
Chip Board	62.50	@67.00
Wood Pulp Board. (Carload Lots)	1.25	@ 1.50
Binder Boards—		
Per ton	75.00	@80.00
Carload lots	75.00	@80.00
Tarred Felts—		
Regular	48.00	@50.00
Slaters	54.00	@56.00
Best Tarred, 1-ply (per roll)	1.35	@ 1.50
Best Tarred, 2-ply (per roll)	1.00	@ 1.15
Best Tarred, 3-ply	1.50	@ 1.65

Bagging

F. o. b. Phila.

Gunny No. 1—		
Foreign	1.25	@
Domestic	1.20	@ 1.25
Manila Rope	5.00	@ 6.25
Sisal Rope	.75	@ .80
Mixed Rope	.75	@ .80
Scrap Burlaps	1.00	@ 1.25
Wool Tares, heavy	2.50	@ 2.75
Mixed Strings	.75	@ .80
No. 1, New Lt. Burlap	1.75	@ 2.00
New Burlap Cuttings	1.75	@ 2.10

Old Papers

F. o. b. Phila.

Shavings—		
No. 1, Hard White	4.00	@ 4.25
No. 2, Hard White	3.50	@ 3.75
No. 1 Soft White	3.50	@ 3.75
No. 2 Soft White	1.75	@ 2.00

(Continued on page 66)

Imports and Exports of Paper and Paper Stock

(*Continued from page 60*)

PHILADELPHIA IMPORTS

WEEK ENDING JUNE 23, 1923

PAPER

Keystone Blue Paper Co., Skipsea, Marseilles, 18 cs.

American Express Co., Ansaldo VII, Genoa, 8 cs.

WRAPPING PAPER

Tradesmen's Nat'l Bank, King City, Hamburg, 27 bls.

RAGS, ETC.

American Wood Pulp Corp., Collamer, Bordeaux, 116 bls. rags.

Waste Material Trading Corp., Collamer, St. Nazaire, 79 bls. rags.

Castle & Overton, by same, 444 bls. rags.

American Wood Pulp Corp., Liberty, Havre, 26 bls. rags.

American Wood Pulp Corp., Liberty, Dunkirk, 177 bls. rags.

E. J. Keller Co., Inc., Ansaldo VII, Genoa, 75 bls. cotton waste.

E. J. Keller Co., Inc., Bradclyde, Hamburg, 338 bls. rags.

E. J. Keller Co., Inc., Brasilia, Hamburg, 327 bls. rags.

Katzenstein & Keene, Inc., Bradavon, Hamburg, 89 bls. rags.

CHARLESTON IMPORTS

WEEK ENDING JUNE 23, 1923

Katzenstein & Keene, Inc., Sacandaga, Glasgow, 49 bls. bagging.

BOSTON IMPORTS

WEEK ENDING JUNE 23, 1923

PAPER

E. J. Keller Co., Inc., Suruga, Hamburg, 236 bls. rags.

Textile Trading Co., by same, 102 bls. cotton waste.

Textile Trading Co., G. Florio, Palermo, 158 bls. cotton waste.

New England Waste Co., by same, 118 bls. cotton waste.

Salomon Bros. & Co., Gattymoree, Glasgow, 239 bls. flax waste.

CASEIN

First Nat'l Bank of Boston, C. Constructor, Wellington, 163 bags.

CHINA CLAY

English China Clay Sales Corp., Watsness Forney, 553 casks, 276 tons, 10 cwt.

English China Clay Sales Corp., by same, bulk, 2,537 tons, 5 cwt.

BALTIMORE IMPORTS

WEEK ENDING JUNE 23, 1923

RAGS, ETC.

A. Brown & Sons, King City, Hamburg, 736 bls. rags.

WOOD PULP

American Wood Pulp Corp., Hessen, Hamburg, 1,850 bls., 323 tons, wood pulp.

M. B. Carlin Co., King City, Hamburg, 997 bls., 199 tons wood pulp.

Nilsen, Lyon & Co., Inc., by same, 75 bls., 15 tons wood pulp.

Hudson Trading Co., by same, 1,084 bls., 162 tons chemical pulp.

FINANCIAL STATEMENTS

(*Continued from page 58*)

there will be good and poor managements. The proportions of the statements of these will be better or worse than the average. By comparing the ratios from a statement of an individual company with the ratios from a consolidated statement of many companies in the same line it may be able to place it in the good or poor class. This would depend on whether or not its proportions were better or worse than those of the group.

36. If such a combined study were made over a series of years and the trends noted the trend of an individual company could be checked to determine whether it was following the general direction of the industry or diverging from it. That such a thing can positively be done is, of course, open to argument, but the indications are so strong that a proper amount of investigation should be given this field.

37. As differing types of business would produce different normals in the ratios, so will difference in location also produce different normals within a type of business. Transportation, the labor supply, the condition of the people in their own prosperity, and many other such forces, affect business differently in various parts of the country. It would be almost as unfair to compare the New England, Texas or Oregon hardware merchant to a general average, as to compare the millinery and hardware man in general.

To overcome the sectional inequalities mentioned above, the country, as a whole, should be divided into several sections.

Type ratios for different kinds of business should be established, first on a national basis, and then for each section, using statements originating in each section as material for compilation.

The differentiation of types of business, and also as between their locations, is a fairly evident economic necessity. The manner of making this differentiation is not difficult to determine. There is, however, another variable to be taken into our calculation, and that is the date of issue of the statement.

The time of the year in which the statement is made may make a considerable difference in its proportions. It may not be fair to compare a January statement with a condition as shown by June figures.

Again, there may be a whole year which may be affected by adverse weather conditions so as to dislocate proportions. It would be unfair to compare the proportion of a bad crop year, for example, with a good crop year, except to study the effects of the bad conditions and perhaps measure their extent.

While this necessity of differentiation is recognized, little can be done to establish ratios prepared upon a basis to allow for this time element until we have cumulative figures extending over a sufficient number of years to establish a reasonably stable ratio set that will not be too much affected by one temporary decline or abnormal advance. Eventually we can develop figures that will apply the law of averages to kind of business, location fo plant, and time of issue.

It may be that such a study will throw some light, if developed, upon the business cycle.

Bids and Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., June 25, 1923.—The Purchasing Officer of the Government Printing Office has received the following bids for 500 sheets of Fine Proving Paper, 22 × 28, coated one side, Louis Dejonge & Co., $31.00 f. o. b. New York City; Whitaker Paper Company, $27.50, $30.80, $34.10, 40.70; and G. C. Dom Supply Co., $39.00.

The Bureau of Supplies & Accounts, Navy Department will receive bids on July 10 for 650 reams of 16 x 21, 20 lbs., white printing paper.

The Bureau of Supplies & Accounts, Navy Department has made the following paper awards, bids for which were opened on June 12.

W. L. Jones Company will furnish 1550 reams of 8 x 13—5½, white laid absorbent mimeograph paper at $651.00. The same firm will also furnish 1200 reams of the same at $528.00.

Samuel Alcorn will furnish 1600 reams of 16 x 21—24, white printing paper at $4,400.00 and the same firm will also furnish 400 reams of the same at $1,180.00.

The old Dominion Paper Company will furnish 23,000 sheets of 20 x 24, heavy oil board stencil paper at $699.20 and Wilkinson Brothers & Company will furnish 125 reams of 20 x 30, bleached grass white tissue paper at $231.25.

The Old Dominion Paper Company has been awarded the contract by the Bureau of Supplies & Accounts, Navy Department for furnishing the Mare Island, Cal., navy yard with 8,000 reams of 8 x 10½—4½, white punched correspondence typewriter paper at $8,799.20, bids for which were opened on June 19.

EBG

Liquid Chlorine

—simplifies an important operation

Many mills have eliminated the disadvantages of the chloride of lime method by substituting EBG Liquid Chlorine.

Liquid Chlorine puts saving simplicity into all bleaching operations. It settles rapidly with little sludge loss; increases bleach production with no additional equipment; produces standard strength solutions; no loss of chlorine in transportation; operating conditions simple and agreeable.

And EBG Service—the pioneer in this field—is equal to any demand!

EBG Liquid Chlorine Supplied in cylinders, ton drums and tank cars.

Electro Bleaching Gas Co.

PIONEER MANUFACTURERS of LIQUID CHLORINE

Plant NIAGARA FALLS, N.Y.

Main office 18 East 41st Street, New York

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Clay

300 Tons daily

Satisfactory deliveries of the *clay* you prefer at prices you will consider reasonable—such is M-E service!

Let us submit samples and quote you.

AMERICAN MADE FOR AMERICAN TRADE

THE MINER EDGAR CO

110 William Street New York

The B C. INC.

QUALITY PULPS

HAFSLUND NORWAY

"HAFSLUND BEAR" Bleached Sulphite

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"FORSHAGA" Bleached Sulphite

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"KLARAFORS" Easy Bleaching Sulphite

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Whalen Sulphite Pulps

Made from the SITKA SPRUCE of BRITISH COLUMBIA. Noted for Fibre, Color and strength.

SNOWHITE BLEACHED SULPHITE
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Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, June 27, 1923.

There has been little or no change in the chemical market during the past week and dealers say that they do not expect the demand to liven up much before the middle of next month. The recent hot wave has caused a desire for rapid turn over in those articles in the market which depreciate when stored in high temperatures. This is particularly true of bleaching powder and a few others. The special prices that are being offered to occasional buyers for this reason are by no means indicative of the general situation in chemicals which is said to be better than it has been for several summers past.

BLEACHING POWDER.—Bleach is still unstable and if the heat keeps up it is liable to become even more so. The price is between 1.65 and 1.75 and trading on the open market is spotty with dealers rushing to get excess supplies off their hands.

CHINA CLAY.—China clay remains unchanged and prices are still firm at the same level in spite of a lessening demand particularly for some of the imported grades. Domestic remains at from $14 to $17 a ton and imported at from $15 to $23.

BLANC FIXE.—Blanc fixe remained steady during the week following a slight falling off in price the week before. Trading on spot goods remains sporadic and dealers are not looking for any change for some little time. It is still quoted at from $50 to $55 a ton on the pulp grade and $80 to $85 on the dry.

CAUSTIC SODA.—Caustic soda is still failing to rouse any great interest among buyers, most of whom seem to have enough on hand to meet their immediate needs. Prominent chemical dealers have decided to quote prices of this product on a flat instead of a sixty per cent basis and beginning next week THE PAPER TRADE JOURNAL will follow this system. The price is still firm at 2.50 cents a pound on the old basis. Under the new it will be somewhat higher.

CASEIN.—Casein was in poor demand during the week with the price down slightly. Last quotations were from 16 to 17.50 cents a pound.

ROSIN.—Naval stores in all grades failed to interest paper manufacturers much during the past week. Prices on papermakers' rosin remain firm at 6.10 to 6.15 cents a pound.

SALTCAKE.—While here is some demand for saltcake it is suffering somewhat from the usual seasonal dullness. The price is firm at $25 to $27 a ton.

SATIN WHITE.—The demand for satin white is irregular in the open market and the mills are not showing much interest in buying for future use. The price is about the same, 1.50 to 2.00 cents a pound.

SODA ASH.—Ash moved slowly this week as it did last with buyers cautious about coming into the market. Prices remained the same, however, for manufacturers are convinced that a downward revision would not capture any more business. This product also will be quoted beginning next week on a flat instead of a percentage basis. The present price is still at about 1.20 cents a pound on the basis of 48 per cent.

STARCH.—Although starch is said to be in somewhat better demand than most of the articles on this market the trading last week was reported as uncertain in the open market. It is quoted at from 3.10 to 3.50 cents a pound.

SULPHATE OF ALUMINA.—Alumina sulphate is still moving sluggishly. Prices remained the same with the commercial grade at from 1.25 to 1.40 cents a pound and the iron free from 2.15 to 2.25.

A scarcity of help is reported by many large lumbering and pulp wood concerns in Northern Ontario but operations in both lines are going ahead apace at the present time.

Market Quotations

(*Continued from page 63*)

No. 1 Mixed	1.60	@	1.75
No. 2 Mixed	1.25	@	1.50
Solid Ledger Stock	2.50	@	2.75
Writing Paper	2.25	@	2.50
No. 1 Books, heavy	2.00	@	2.25
No. 2 Books, light	1.40	@	1.50
No. 1 New Manila	2.75	@	3.00
No. 1 Old Manila	1.50	@	1.75
Container Manila	1.35	@	1.50
Old Kraft	2.25	@	2.50
Overissue News	1.50	@	1.60
Old Newspaper	1.00	@	1.50
No. 1 Mixer Paper	1.00	@	1.10
Common Paper	.80	@	.90
Straw Board, Chip	1.00	@	1.10
Binders Bd., Chip	1.00	@	1.10

Domestic Rags—New.
Price to Mill, f. o. b. Phila.

Shirt Cuttings—			
New White, No. 1	.12	@	.12¼
New White, No. 2	.07	@	
Silicias, No. 1	.07¼	@	.07¾
New unbleached	.10	@	.11
Washables	.04½	@	
Fancy	.05¼	@	.05¾
Cottons—according to grades—			
Blue Overall	.05½	@	.05¾
New Blue	.02¾	@	.02¼
New Black Soft	.06¼	@	.06½
New Light Seconds	.02½	@	.02¾
Khaki Cuttings	.11	@	.04½
Corduroy	.03½	@	.04
New Canvass	.08¼	@	.08¾
New Black Mixed	.04	@	
Old White, No. 1—			
Repacked	.06	@	.06½
Miscellaneous	.04½	@	.04¾
White, No. 2—			
Repacked	.03½	@	.04
Miscellaneous	.03	@	.03¼
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.85	@	1.90
Black Stockings	2.75	@	3.00
Roofing Stock—			
No. 1	1.35	@	1.40
No. 2	1.25	@	1.30
No. 3	1.15	@	1.20
No. 4	1.15	@	1.20
No. 5A	1.10	@	
B			nominal
C			nominal

BOSTON

[FROM OUR REGULAR CORRESPONDENT.]

Paper

Bonds	.09½	@	.63
Ledgers	.09½	@	.55
Writings	.08½	@	.42
Superfine	.16	@	.26
Fine	.15	@	.18
Books, S. & S. C.	.07¼	@	.12
Books, M. F.	.06¾	@	.09½
Books, coated	.09	@	.15
Label	.09	@	.13
News, sheets	4.75	@	6.00
News, rolls	4.50	@	5.75
Manilas—			
No. 1 Manila	$6.00	@	7.00
No. 1 Fiber	.06½	@	.07
No. 1 Jute	9.00	@	10.50
Kraft Wrapping	.07	@	
Common Bogus	3.50	@	3.85

Boards

(Per Ton Destination)

Chip	$62.50	@	65.00
News, Vat Lined	65.00	@	70.00
Wood, Vat Lined	72.50	@	75.00
Filled News Board	65.00	@	
Solid News Board	75.00	@	80.00
S. Manila Chip	75.00	@	80.00
Pat. Coated	90.00	@	105.00

Old Papers

Shavings—			
No. 1 Hard White	4.15	@	4.25
No. 1 Soft White	3.35	@	3.50
No. 1 Mixed	.90	@	1.00
Ledgers & Writing	2.00	@	2.25
Solid Books	1.75	@	1.90
Blanks	1.25	@	1.50
No. 2 Light Books	1.50	@	
Folded News, overissues	1.00	@	
Gunny Pagging	1.15	@	1.25
Manila Rope	6.25	@	6.50
Common Paper	1.00	@	
Common Mixed	.70	@	.75
Old News	.80	@	.90
Old Kraft	1.90	@	2.10
No. 1 Scrap Burlap	.90	@	1.00
No. 2 Roofing Bagging	.60	@	.70
Mixed Strings, 1 cent per lb.			

TORONTO

[FROM OUR REGULAR CORRESPONDENT.]

Paper

(Mill Prices to Jobbers f. o. b. Mill)

Bond—			
Sulphite	.11	@	.12½
Light tinted	.12	@	.13½
Dark Tinted	.13½	@	.15
Ledgers (sulphite)	—	@	.13
Writing	.09½	@	.12
News, f. o. b. Mills—			
Rolls (carloads)	3.75	@	—
Sheets (carloads)	—	@	4.50
Sheets (2 tons or over)	—	@	4.75
Book—			
No. 1 M. F. (carloads)	9.00	@	—
No. 2 M. F. (carloads)	8.00	@	—
No. 3 M. F. (carloads)	7.50	@	—
No. 1 S. C. (carloads)	9.50	@	—
No. 2 S. C. (carloads)	8.50	@	—
No. 1 Coated and litho.	14.00	@	—
No. 2 Coated and litho	13.00	@	—
No. 3 Coated and litho.	12.25	@	—
Coated and litho., colored	14.25	@	—
Wrapping—			
Grey	5.00	@	—
White Wrap	5.75	@	—
"B" Manila	6.00	@	—
No. 1 Manila	7.25	@	—
Fiber	7.25	@	—
Kraft, M. F.	8.00	@	—
M. G.	8.15	@	—

Pulp

(F. o. b. Mill)

Ground wood	$36.00	@	38.00
Sulphite easy bleaching	60.00	@	65.00
Sulphite news grade	50.00	@	55.00
Sulphite, bleached	90.00	@	92.50
Sulphate	70.00	@	72.50

Old Waste Papers

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.90	@	—
Soft White Book shavings	3.40	@	—
White Blk. News	2.00	@	2.10
Book and Ledger—			
Flat Magazine and Book Stock(old)	1.80	@	—
Light and Crumpled Book Stock	1.65	@	—
Ledgers and Writings	2.00	@	—
Solid Ledgers	2.00	@	—
Manilas—			
New Manila Cut	2.10	@	—
Printed Manilas	1.85	@	—
Kraft	2.50	@	—
News and Scrap—			
Strictly Overissue	1.30	@	—
Folded News	1.30	@	—
No. 1 Mixed Papers	1.00	@	—

Domestic Rags—
Price to mills, f. o. b. Toronto Per lb.

No. 1 White shirt cuttings	12	@	
No. 2 White shirt cuttings	.06	@	—
Fancy shirt cuttings	.05½	@	
No. 1 Old Whites	.04½	@	—
Thirds and blues	.02¼	@	.02½
	Per cwt		
Black stockings	.03	@	—
Roofing stock:			
No. 1	—	@	—
No. 2	—	@	—
Roofing stock:			
Manila rope	.05½	@	—
No. 2	1.55	@	—
Gunny bagging	.01½	@	—

The Home of Quality

FACTORY
132ND TO 133RD ST. & BROOK AVE

PAPER BAGS

Sacks and Specialties

This Registered Trade Mark Octagon

on a Paper Bag Vouches for Its Good Quality

ESTABLISHED 1901

SCHORSCH & CO.

Manufacturers

500 East 133d Street : New York

The Union Sulphur Company

Producers of the Highest Grade Brimstone on the market . .

ABSOLUTELY FREE FROM ARSENIC OR SELENIUM

The Largest Sulphur Mine in the World

CALCASIEU PARISH, LOUISIANA

Main Offices: Frasch Building, 33 Rector Street, New York

POWER PLANT PIPING

A F&C C

VALVES, FITTINGS, FLANGES, BENDS

Any Service · Any Pressure

"AMERICAN" WELDED HEADERS

PULP, AND PAPER MILL WORK

American Foundry and Construction Company

Engineers, Fabricators, Erectors

PITTSBURGH, PENNA.

COLORS FOR PAPERMAKERS

KUTTROFF, PICKHARDT & CO.
INCORPORATED

128 Duane Street - - New York

BOSTON - 157 Federal St. PHILA. - 111 Arch St.
PROV. - 82 Exchange Pl. CHI. - 305 W. Randolph St.

F Diamond-F

PROTECTIVE PAPERS

Glassine Parchmoid
Vegetable Parchment Greaseproof

Diamond Fibre Receptacles of all kinds

Diamond State Fibre Company

BRIDGEPORT (near Philadelphia) PENNSYLVANIA

In Canada: Diamond State Fibre Company of Canada, Limited. 245 Carlaw Ave., Toronto, Ont.

USE ENGLISH CLAYS

ECCO CLAYS TRADE MARK

COATING AND FILLER

ENGLISH CHINA CLAYS SALES CORPORATION

33 WEST 42nd STREET NEW YORK CITY

Felt Test—Lowest Cost per Ton

If you judge felt values, not by what you put into the equipment, but what you get out of it—then you will specify ORR 3 stripe Endless Felts for ORR felts will produce the lowest cost per ton. They "stand up" under severe usage. Orr durability is acknowledged everywhere. Their strength and long life are as dependable as their reliability and quality.

In the 32 grades of Felts and Jackets we can match your most exacting demands. Tell us the kind of paper you desire to make, and we will send you samples of felts that will economically serve you and help you to produce paper at lowest cost per ton.

THE ORR FELT & BLANKET COMPANY, Piqua, Ohio

THE DRAPER FELTS

All kinds and styles of Felts for all kinds and styles of Papers.

Write us about your Felt problems and let us help you reduce your Felt Costs—we will call anywhere at any time.

DRAPER BROS. COMPANY
CANTON, MASS.
Woolen manufacturers since 1856.

1864 1923

"EXCELSIOR" FELTS

for every grade of

PULP AND PAPER

We continue to maintain at the top the quality of Excelsior Felts, as we have done since we, as pioneers, made the first endless paper machine felts manufactured in America.

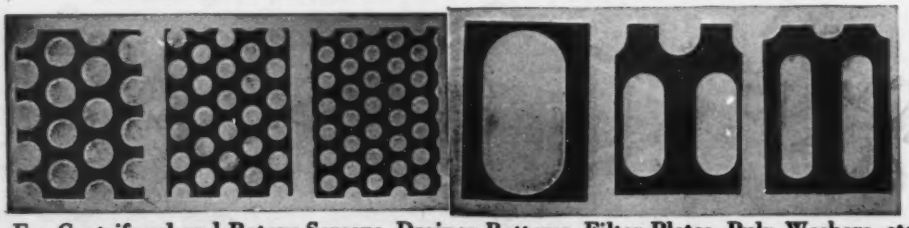
Seamless felts for fast running.
Satin Style felts for finish.
Special felts to meet every condition.
Send us your felt problems.

KNOX WOOLEN COMPANY
CAMDEN, MAINE

SOLD BY
BULKLEY, DUNTON & COMPANY
75-77 Duane St., N. Y., and direct

PERFORATED METALS

All sizes and shapes of Holes



All kinds and thicknesses of Metal

For Centrifugal and Rotary Screens, Drainer Bottoms, Filter Plates, Pulp Washers, etc.

The Harrington & King Perforating Company

518 No. Union Ave., Chicago, Ill., U. S. A. New York Office, 114 Liberty St.

DEUBENER'S PATENT
SHOPPING BAGS
MADE FROM
HEAVY WEIGHT MOSINEE KRAFT
The handle (9 ft. long) carries from the bottom. Won't pull out. Output nearly six million bags in 1922, with no complaints.
LET'S GO!
DEUBENER
Sole Mfgr.
St. Paul, Minn.

Trade Mark

Reg. U. S. Patent Office

"G.B." EXTRA BLUES
"G.B." MEDIUM WHITES
EXCEL IN COLOR, STRENGTH, RAG CONTENT
Inquiries solicited
GUMBINSKY BROS. CO.
America's Largest Packers of Rags and Waste Paper
2261 South Union Ave., Chicago, Illinois

Blotting Paper of the Best Quality
MANUFACTURED BY
THE EATON-DIKEMAN COMPANY
LEE, MASS.
Manufacturers of Blotting, Matrix, Filter and all other grades of absorbent papers.
Registered brands Magnet and Columbian, also Lenox and Arlington.
SEND FOR SAMPLES AND PRICES

ESTABLISHED 1861
IRA L. BEEBE CYRUS E. JONES
IRA L. BEEBE & CO.
132 Nassau St., New York

IMPORTERS AND DEALERS IN
WOOD PULP

The John W. Higman Co.
29 Broadway New York City
QUALITY
CLAYS
FOR ALL PURPOSES
ENGLISH AND AMERICAN

E. J. KELLER COMPANY
INCORPORATED
200 FIFTH AVENUE
NEW YORK
FOREIGN AND DOMESTIC
PAPER MAKERS' SUPPLIES
CHEMICAL AND MECHANICAL PULPS
COTTON, JUTE AND FLAX WASTES
EAST INDIA MERCHANDISE

STOKERS
STOKERS OF ALL SIZES FOR ANY APPLICATION
Address Nearest Office
Sales and Service Offices in All Principal Cities
Westinghouse Electric & Mfg. Co.
South Philadelphia Works
Philadelphia, Pa.
W
WESTINGHOUSE ELECTRIC
Westinghouse

WANT AND FOR SALE ADVERTISEMENTS

CLASSIFIED ADVERTISEMENTS—4c a word, double rate for display heavy faced type). Minimum charge $1.00.

"HELP WANTED" ADVERTISEMENTS—4c a word, double rates for display (heavy face type). Minimum charge $1.00.

"SITUATION WANTED" ADVERTISEMENTS—4c a word, double rates for display (heavy face type). Minimum charge $1.00. If repeated one-half rate will be charged for each consecutive repetition.

All Classified, "Help Wanted" and "Situation Wanted" advertisements must be prepaid except those running charge accounts.

HELP WANTED

WANTED—Superintendent experienced in light weight tissues—waxing and toilet grades—cylinder machines. Give full information as to experience, salary desired, etc. Address Box 6312, care Paper Trade Journal. Jn-28

WANTED—Good reliable machine tender to act as Tour Boss in Roofing Felt Mill located near New York City. Only reliable and experienced men need apply. State experience and wage desired in first letter. Address, Box 6313, care Paper Trade Journal. tf.

BEATER ENGINEER—By Mill in Ohio. No labor trouble. Experience on Card Board Stock essential. Write, giving age, experience and salary expected, to Box 6314, care Paper Trade Journal. Jl-5

WANTED—Two Back-Tenders on fast-running Tissue Machine, Edwards attachment. Fifty-three cents per hour, eight-hour shifts. Southern New England Mill. Box 6315, Paper Trade Journal. Jl-5

BAG MACHINE ADJUSTER experienced on Improved and Square machines, wanted by bag factory located in Ohio. State experience and salary expected in first letter. Good opportunity for first-class man. Address, Box 6316, care Paper Trade Journal. Jl-5

WANTED—Machine Tender for 60" board machine; two tours; seventy cents per hour. Address, Box 6317, care Paper Trade Journal. Jn-28

YOUNG MAN, about 25, with some knowledge of papers and paper manufacture, to take charge of orders, samples, etc., in mill making Bleached Sulphites. Give age, references, salary expected, etc., etc. Address, Box 6318, care Paper Trade Journal. Jl-5

WANTED — Night Superintendent, with three machine mill, making cylinder and Fourdrinier light weight sulphite specialties. Young man looking to the future preferred; no others need apply. Address, Box 6260, care Paper Trade Journal. Jn-28

WANTED—Two Back Tenders for Pacific Coast Mill. Address, Box 6294, care Paper Trade Journal. Jl-5

WANTED—Three machine tenders and three back tenders on a felt machine. We pay .62 per hour for machine tenders and .52 for back tenders—8 hours a day. The mill is situated in one of the most beautiful cities in the Middle West and has all the conveniences that a modern city should have. Address, Box 6296, care Paper Trade Journal. Jl-5

HEAD MILLWRIGHT—Two tour News and Chip Board Mill. 35 tons daily, Eastern States. Address, Box 6311, care Paper Trade Journal. Jn-28

WANTED—Machine tenders, back tenders, beater engineer for new Kraft Paper Mill in Middle West. Fine living conditions. High School. Address, Box 6299, care Paper Trade Journal. Jn-28

PAPER SALESMAN—For Jobbing and Converting Trade. Good connection with firm representing several mills. Give full particulars regarding experience and state age in confidence. Address, Box 6329, care Paper Trade Journal. Jn-28

HELP WANTED

WANTED—Boss Beaterman for two tour mill operating Chip and News Board in vicinity of New York City. Address, Box 6300, care Paper Trade Journal. Jn-28

WANTED—Machine Tender and Back Tender for Harper Machine making Fine Tissues. Good wages, steady work, three tours. Address, Box 6077, care Paper Trade Journal. tf.

WANTED—Machine Tenders thoroughly competent to handle a Harper Fourdrinier machine running 340 ft. to 380 ft. making tissues up to 24 x 36 — 25 lb. Long Tours. Apply: Flower City Tissue Mills Co., Rochester, N. Y. Jn-28

PULP AND PAPER CHEMIST—Preferably chemical engineer. Our works include all processes from forest to finished paper. Wide range of problems, both routine and research. Calls for young man of good preparation, broad ambition, with versatile open mind. Tell all pertinent facts in first letter, especially why you are applying. Address, Box 6293, care Paper Trade Journal. Jl-5

WANTED—Night Superintendent in 60 Ton Soda Pulp Mill. Must have experience in cooking, washing, recovery, and bleaching. Give full particulars in first letter, especially regarding age, experience, salary desired, and if married or single. Address, Box 6257, care Paper Trade Journal. Jn-28

WANTED — Experienced American Back Tenders and Beater Engineers for Paper Mill located near New York City; manufacturing Roofing Felt. State experience. Address, Box 6196, care Paper Trade Journal. tf

SALESMAN—Thoroughly experienced book paper man to cover publishing and printing trade in Philadelphia. Reply by letter only, stating full details. Letters will be held in confidence. Whiting-Paterson Co., Inc., 320 No. 13th Street, Philadelphia, Pa. tf

WANTED—Experienced American Cylinder Machine Tenders for roofing mill located near New York City. Experienced men only need apply. State reference and age in first letter. Address, Box 6240, care Paper Trade Journal. tf

WANTED—Third hands on Fourdrinier Machines. Eight (8) hours. Mill located near New York. Good chances for advancement. Address, Box 6301, care Paper Trade Journal. Jn-28

PRINTING PAPER MAN

Large progressive New York paper firm with excellent mill connections, has opening for man with experience selling book and other printing papers to publishers and large printers. Must be good correspondent and be capable to assume charge of this department. One having knowledge of mills as well as national acquaintance with buyers desired. State your age, experience and why you feel qualified for this position; also remuneration views. Address, Box 6242, care Paper Trade Journal. Jn-28

MACHINE TENDER and BEATER MAN WANTED—Small board mill, attractively located in eastern Massachusetts, operating 2 tours. Include in reply, list of references, age, number of dependents, complete information on previous experience and wages expected. Address, Box 6325, care Paper Trade Journal. Jl-12

WANTED—A Beaterman for a two machine mill making book and rag specialties. Three tours. Address, Box 6326, care Paper Trade Journal. Jl-5

SALESMAN—Experienced in the line of Paper and Paper Bags. One familiar with Philadelphia and out-of-town districts. Apply Eli Resnick, 929 No. Marshall St., Philadelphia. Jn-28

HELP WANTED

WANTED—Mechanical Draftsman, New York City, experienced in paper and pulp mill machinery. Must be familiar with metric system. State full particulars, experience and salary expected. Address, Box 6275, care Paper Trade Journal. Jn-28

WANTED — First-class Beaterman on Bonds, Book, Writing, Tablets, etc. Wages 65c per hour—12 hour day. Also Super Calender man 55c per hour—10 hour day, all day work. State experience in first letter. Address, Box 6323, care Paper Trade Journal. Jl-12

WANTED — Master-mechanic for one-machine board Mill. Must be first-class mechanic and well up on paper mill equipment as well as boilers, engines and water-wheels. Address, Box 6324, care Paper Trade Journal. Jl-12

SITUATIONS WANTED

SITUATION WANTED FOR WOODPULP SALESMAN—Because of reorganization of selling forces, combined with present trade conditions, the advertisers desire to place one of their Wood Pulp salesmen. Address, Box 6319, care Paper Trade Journal. Jn-28

SULPHITE SUPERINTENDENT — With many years practical experience in the manufacture of all grades of Sulphite Pulp wishes position. Familiar with all kinds of acid systems, repairs and general upkeep. Best of references, both for economy, production and quality can be furnished. Address, Box 6320, care Paper Trade Journal. Jl-19

POSITION WANTED—Boss Machine Tender, long experience with H. &. W. Co., Waterville, Maine. Can get results. Prefer new Mill. Address, Box 6304, care Paper Trade Journal. Jl-26

CHEMICAL ENGINEER—Experienced in low cost mill operation, i. e., lubrication, full consumption, sulphite manufacture, finished product, etc., desires position with paper mill supporting progressive Technical Department. Address, Box 6307, care Paper Trade Journal. Jl-5

CHEMIST—Young man wishes to have charge of laboratory in small pulp or paper mill. Four years' experience. Thorough knowledge of mill processes and control. Reasonable salary. Address, Box 6282, care Paper Trade Journal. Jn-28

MECHANICAL ENGINEER—Sixteen years' technical and practical experience with Groundwood, Sulphite and News print mills; open for engagement. Best of references. Address, Box 6283, care Paper Trade Journal. Jn-28

BOX BOARD SUPERINTENDENT, who has had 25 years' experience in the manufacture of the various grades of box boards is open for position; exceptionally well equipped to produce results of the highest order, practical experience in all departments of modern mill, including power plant. Best of references as to character and ability. Will come for personal interview. Address, Box 6266, care Paper Trade Journal. Jl-19

YOUNG MAN, well educated, at present engaged as night superintendent in book mill, desires opportunity in official capacity with daylight hours. Familiar with kraft and boards. Address, Box 6062, care Paper Trade Journal. tf

WANTED—Position as Superintendent. 25 years' experience on News, Manillas and Bag. Address, Box 6291, care Paper Trade Journal. Jl-26

NEW YORK REPRESENTATIVE wishes to acquire Mill accounts consisting of Kraft, Fiber, News; also Tissue and Crepe Paper in jumbo rolls, to act as Mill Agent in Greater New York and Metropolitan District. In paper line number of years selling to the big trade. Address, Box 6288, care Paper Trade Journal. tf.

SITUATIONS WANTED

PAPER SALESMAN—New York City. Would like to represent Philadelphia House here, with good Mill connections. Can secure large volume of business in M. F., Super, Coated two sides, Litho Coated one side, Bond, Kraft, Etc., with the right co-operation. Drawing account on commission basis. Address, Box 6246, care Paper Trade Journal. tf

SUPERINTENDENT wishes position. 24 years' experience on all the better grades of Box Board and an expert on High Test Container. Thoroughly familiar with all repairs and modern methods, and can put all mill equipment in shape to get quality and production. Married, age 44, can furnish first-class references. Address, Box 6177 care Paper Trade Journal. tf.

SITUATION WANTED—by a young man with several years experience on Book, Bonds, Writings, Ledger, Envelope and Kraft. A position as salesman for either a Jobbing House or a Paper Manufacturing company. Have worked in all departments of a paper mill. Address, Box 6308, care Paper Trade Journal. Jl-5

NEW YORK MAN in Paper Industry for many years, desires position as New York Sales Office Manager. Address, Box 6280, care Paper Trade Journal. tf.

EXECUTIVE or Sales Position wanted by man, well educated, with fifteen years' experience both book and board. Was formerly mill manager; also sales representative. Address, Box 6321, care Paper Trade Journal. Jl-26

SULPHITE SUPERINTENDENT wishes to change position. Experienced. Thoroughly understands processes. Especially well versed in cooking and acid making. Best of references. Address, Box 6279, care Paper Trade Journal. Jl-19

SUPERINTENDENT — Efficient, Capable executive, all grades boxboards, Tags, Bristols, Middles, Cardboards, Test Containers and Felts; open for position. Can put mill in best condition for quality and production and get results. Address, Box 6302, care Paper Trade Journal. Jl-19

SCANDINAVIAN Pulp and Paper Man, with American selling experience, desires to connect with good Wood Pulp concern. Best references and connections. Address, Box 6303, Paper Trade Journal. Jn-28

AN EXPERIENCED PAPER SALESMAN now employed, but desiring to enlarge his field of activities, is open for engagement. Thoroughly experienced in both fine and coarse grades of paper. Thoroughly familiar with and widely acquainted with the jobbing, converting and large consuming trade. Any organization desiring a man with ability, efficiency and initiative would do well to communicate. Highest references available. Address, Box 6327, care Paper Trade Journal. Jl-5

MISCELLANEOUS

FOR SALE—One new 250 H. P. Fitchburg Steam Engine. For full details and price, address Bogota Paper & Board Company, Bogota, New Jersey. tf

WANTED—Cast iron dryers, diameter 36" x 48" to 54" face. O. S. Kirkeby, Room 706, 61 Broadway, New York. tf

FOR SALE

One Pine Water Tank in first-class condition. Diameter—20 ft., Depth—18 ft.

Carew Manufacturing Company

So. Hadley Falls, Mass.

Jn-28

BARGAINS

New and Used Equipment

Immediate Delivery

Brand New Boilers

8—823 H.P., 200 lbs. pressure, ASME code. Taylor stokers, superheaters B & W Stirling Boilers.

Slightly Used Boilers

3—600 H.P. Keeler Water Tube Boilers, Jones Stokers, 200 lbs. pressure. Ohio.

Soda and Sulphate Evaporators

2—Quadruple Zarembas 2800 sq. ft. each effect, CONDENSERS AND PUMPS.

1—Yaryan Triple effect Evaporator with Heater and Pumps.

1—Caustic Evaporator, complete Bufflocast, capacity 75 tons daily.

Sulphur Burners

2—4 x 16 feet Glens Falls.
2—4 x 14 feet Glens Falls.
2—4 x 20 feet Glens Falls.

Digesters

6—8 x 27' HAMMER WELDED Digesters will insure 150 lbs.
2—14 ft. Globe Digesters.

Filter Presses

2—New Type 450 Kelly.
2—New Type 650 Kelly.
1—New Type 850 Kelly.

Tower Tanks

1—Steel Tower Tank, 225,000 gallons capacity.
1—Steel Tower Tank, 130 feet high, 300,000 gallons capacity.

Large Pumps

1—Worthington Compound Duplex, 4500 gallons per minute capacity.

Pusey & Jones Centrifugal Pumps

6—7" size, NEW and slightly used.

New McGowan Pumps

1—22½ x 16 x 24 NEVER USED. Brass liners, bronze rods, Russia iron lagging, 1600-2800 G. P. M. 100 lbs. pressure.

25 Cycle Belted Generator

1—Fort Wayne, 480 volts—200 K. V. A.

Brand New Condensers

2—Wheeler Rectangular pattern, three pass, high vacuum surface Condensers, each containing 2100 sq. ft. of cooling surface.

Umphreson Beaters

4—1000 lbs. capacity.

New Tanks

6—20 ft. diam., 20 ft. high, open top ¼".
2—16 x 14 open top ¼".

Pulp Grinders

2—3 pocket 27" x 54" stone wood pulp grinders with 700 H. P. motor.

Wet Machine

2—78" five cylinder.

Supercalender Stack

1—No. 13 Jos. Eck Dusseldorf, 5 rolls 56" face.

Technical Economist Corporation

2 Rector Street, N. Y. City

Telephone Whitehall 5243 Cable Herenco

SITUATIONS WANTED

SUPERINTENDENT—OPEN FOR POSITION AFTER JULY 15TH; 16 YEARS' EXPERIENCE ON ALL GRADES OF BOX BOARDS AND CONTAINERS. WELL UP ON STEAM AND REPAIRS. CAN FURNISH BEST OF REFERENCES. NO PROPOSITION TOO SMALL TO BE CONSIDERED. ADDRESS, BOX 6330, CARE PAPER TRADE JOURNAL. Jl-5

IMPORTANT NOTICE

Practically all organizations have an opening, if they would only deal fairly and honestly with themselves, for a man of experience, judgment, and executive ability, to put new life and snap into their business, make your present employees feel that there is a reasonable amount of hazard attached to their positions, and that in order to later appear on the pension roll, they will be compelled to work faithfully and diligently 100%, not a part of the time but all.

If the fact exists that DRY ROT is well seated in your organization, on account of your relatives, good friends, or those that may have been in your employ too long, occupying important positions, with you and your Company, would you not be better off to pay them to stay away, enabling new blood to bear down on the possibilities of your future business development, to the maximum.

I am personally somewhat conversant with the Paper and Paper Specialty Manufacturing business, having been actively engaged in all angles of same for 31 years, Financing Buying, Selling, Manufacturing, and entire supervision, am 45 years of age with family, will be glad to tell you personally if you wish, just why I am offering my services after this long career. If you are seriously interested, I will thank you for an early interview—Banking and Mercantile References—Address, Box 6309, care Paper Trade Journal. Jn-28

NOTICE

When replying to advertisements which have a BOX NUMBER always make certain you have the correct **Box Number** in the address. This will insure your letter being sent to the right advertiser.

Super Calender 52" wide, Seven rolls

Made by Holyoke Machine Co.
Bottom roll 18" x 54", journals 9" x 15".
Two Intermediate chilled iron rolls, 10" x 54".
Two new cotton rolls 14" x 52".
Top roll 14" x 54".
Equipped with levers and weights.
Two shaft revolving winder.
Drive fast and slow speed.
Weight, approximately 38,000 lbs.

PRICE $4,000.00

This stack will take nine rolls and we can furnish the two additional rolls if desired.

Overhauled and ready for delivery.

Frank H. Davis Company

175 Richdale Ave., Cambridge, Mass.

MISCELLANEOUS

FOR SALE—One used 40" Paper Coating Machine manufactured by John Waldron & Co. Complete and in good condition. Immediate delivery. Reasonable price. Address, Box 6322, care Paper Trade Journal. Jn-28-Jl-19

FOR SALE—One 600-lb. Noble & Wood beater. Size of roll 41" in diameter 42" face. Space required over all 20' x 13' Inquire Fort Howard Paper Company, Green Bay, Wisconsin. Jl-12

WANTED—48" or 54" Automatic Paper Knife. Must be in good condition. Write Victory Bag & Paper Company, Marinette, Wisconsin. Jn-28

FOR SALE—Three cylinder molds, 30" diameter, 52" face. Address, Waltham Paper Mill, Waltham, Mass. Jl-12

MISCELLANEOUS

WE WANT TO BUY one 800 to 1,000 lb. used beater, complete with liters, tub and roll. Must be a bargain. Also one No. 4 or No. 5 Nash Vacuum Pump and one 6" or 8" Single Plunger Stock pump. These must be in good operating condition. Stormcote Roofing Corp., East St. Louis, Ill. Jn-28

STANDING PULPWOOD FOR SALE—Over 35,000 cords of Spruce, Balsam and Hemlock; or would sell entire tract and splendid equipment. Communications will be held in confidence. Address, Box 6310, care Paper Trade Journal. Jl-5

FOR SALE—6 Farnum Drives. Complete Triple-Deck Frames for 44 dryers. 1—8 ft. NORTH Save-All. Will arrange terms to suit. Chesapeake Paperboard Co., Baltimore, Maryland. tf

MISCELLANEOUS

FOR SALE—One 12" to 48" paper coating, splicing and rewinding machine. Bargain, $600.00. Value, $2,000.00. Being sold for charges. Central Tool & Machine Co., 3128 Park Ave., Chicago, Ill. Jn-28

FOR SALE—Eighteen Feet High Revolvator, $210. As good as new; used very little. Very good for Paper Warehouse. Address, Box 6328, care Paper Trade Journal. Jl-12

FOR SALE—Seibold 50" Cutter for paper and mill use only; can be seen at our Brooklyn office; Rose Lithographic Corporation, 55-33rd St., Brooklyn, N. Y. Jn-28

THESE LITTLE ADS
BRING RESULTS

Mill Cogs

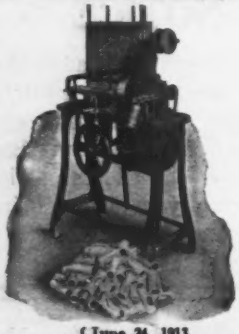
ON SHORTEST POSSIBLE NOTICE

We make all kinds of Mill Cogs and have special facilities that will be of great service to you. We make a specialty of "ready dressed" cogs which are

READY TO RUN

the moment driven and keyed. Write at once for circular "G" and instruction sheets, free.

THE N. P. BOWSHER CO., South Bend, Ind.
Established 1882.



Patented { June 24, 1913. / August 10, 1915.

GRISSINGER
Patented
AUTOMATIC TUBE MACHINE
Wire Stitched Tube
TOILET PAPER MACHINERY
GRISSINGER MACHINE WORKS
PHILADELPHIA, PA.

Complete Purification Plant for sale at Hopewell, Va.

Comprising eight steel, seamless welded digesters, 8' in diameter by 25' long, together with the accompanying liquor making apparatus, liquor tanks, blow connections and blow tanks, shafting, pulleys, hangers, and 2-250 H.P. Nordberg engines. The building is a steel frame structure 85' wide by 184' long. and 73' high to the peak, comprising altogether about 800 tons of structural steel.

Entire equipment excellent condition. Used only three months. Cost the Government $400,000. Will sell at very reasonable figure, as is and where is, or F.O.B. cars, building and all.

GIBBS-BROWER COMPANY

Paper and Pulp Mill Brokers

261 Broadway
NEW YORK CITY
Telephone—Barclay 8620

166 W. Jackson St.,
CHICAGO, ILL.
Telephone—Wabash 1308

OUR MOTTO: "SERVICE FIRST"

The Shartle Bros. Machine Co. **Middletown, Ohio**

STRAWBOARD MILLS FOR SALE

AMERICAN STRAWBOARD COMPANY

BANKRUPT

By order of the United States District Court the Trustee will receive bids for all or any part of the properties of the AMERICAN STRAWBOARD COMPANY.

MILLS LOCATED AT—

QUINCY—*Illinois*
WILMINGTON—*Illinois*
NOBLESVILLE—*Indiana*
CIRCLEVILLE—*Ohio*
WINCHESTER—*Virginia*

The Mills at Quincy, Wilmington and Noblesville have been operated by the Trustee at a substantial profit and will be in operation at the time of this sale.

The Trustee also offers for sale certain contracts and properties specified in Trustee's inventory.

All bids will be reported to Referee Frank L. Wean, 437 Monadnock Building, Chicago, at 10:00 o'clock (Standard time) on Wednesday the 18th day of July, 1923. Bidders will have the right to make their bids at that time or make any additional bids that they may desire.

For full information or circular address:

CULVER, ANDREW & KING
Attorneys for Trustee
New York Life Building
Chicago, Illinois
(Phone) Central 0668

FRANK M. McKEY, *Trustee*
1039 First Nat'l Bank Bldg.
Chicago, Illinois
(Phone) Randolph 2372

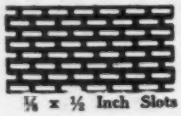
Perforated Metal Screens

For Pulp and Paper Mills

STEEL, COPPER, BRASS, BRONZE and other Alloys

punched for Centrifugal and Rotary Screens, Pulp Washers, Drainer Bottoms, Filter Plates, etc.

.065 Inch Round



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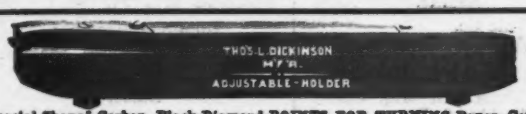

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Index to Advertisers

	Page
A	
American Foundry & Construction Co.	67
American Mfg. Co.	19
American Voith Contact Co.	—
American Wood Pulp Corp.	81
Andersen & Co., J.	4
Appleton Machine Co.	59
Appleton Wire Works	74
Appleton Woolen Mills	11
Arabol Mfg. Co.	83
Arnold, Hoffman & Co., Inc.	—
Atterbury Bros., Inc.	77
B	
Bahr Bros. Mfg. Co., Inc.	77
Baker Mfg. Corp.	82
Bartlett, O. L.	—
Bayless Mfg. Corp.	81
Becker Paper Corp.	59
Beebe & Co., Ira L.	69
Bell, Charles W.	—
Beloit Iron Works	33
Benninghofen & Sons Co.	77
Biggs Boiler Works Co.	83
Bird Machine Co.	31
Black-Clawson Co.	—
Bolton & Sons, Inc., John W.	9
Borregaard Co., Inc.	65
Bowsher Co., The N. P.	72
Bradley Sales Agency	75
Bridgeport Safety Emery Wheel Co.	76
Bristol Co., The	—
Brown Co.	5
Buchanan & Bolt Wire Co.	12
Buck, Kiaer & Co.	—
Buffalo Forge Co.	15
Buffalo Steam Pump Co.	—
Bulkley, Dunton & Co.	20, 68
Burt Company, Ltd., F. N.	18
Butterworth & Co., Inc., E.	76
Byers Co., A. M.	—
C	
Cabble Excelsior Wire Mfg. Co., Wm.	74
Cady & Co., E. J.	—
Cameron Machine Co.	77
Canadian Robert Dollar Co.	65
Cary Mfg. Co.	11
Carthage Machine Co.	9
Casein Mfg. Co., The	10
Castle & Overton	83
Central Mfg. Co.	—
Cheney Bigelow Wire Wks.	82
Chicago Paper Co.	—
Clark-Aiken Co., The	13
Cleveland Worm & Gear Co.	21
Collins Mfg. Co.	7
Columbian Paper Co.	80
Columbian Rope Co.	—
Crane Co.	—
Crossley Machine Co., The	—
Curtis & Curtis Co.	74
D	
Davis, Frank H.	71
Dayton Beater & Hoist Co.	—
Dayton Globe Iron Works.	77
Deubener	69
Diamond State Fibre Co.	67
Dickinson, Thos. L.	77
Dietz Machine Works	8
Dillon & Barnes	77
Dillon Machine Co.	82
Dilts Machine Works	12
Dodge Mfg. Co.	—
Dowd Knife Wks., Inc., R. J.	—
Downingtown Mfg. Co.	84
Draper Bros Co.	68
Drew, George F.	75
Du Pont de Nemours, E. I., & Co., Inc.	22
E	
Eastern Mfg. Co.	—
Eastwood Wire Mfg. Co.	84
Eaton-Dikeman Co.	69
Edge Moor Iron Co.	—
Electro Bleaching Gas Co.	65
Elixman Paper Core Co.	—
Emerson Mfg. Co.	12
English China Clay Sales Corporation	67
Enterprise Iron Works	—
F	
Farrel Foundry & Machine Company	—
Ferguson, Hardy S.	75
Fibre Making Process Co.	—
Field, William T.	75
Fischer Machine Co.	—
Fitchburg Duck Mills	—
Flexible Steel Lacing Co.	—
Foreign Paper Mills, Inc.	3
Fort Howard Paper Co.	13
Foxboro Co., The	4
Franklin Paper Co.	—
Frederick Iron & Steel Co.	—
G	
Galetta Products Co.	74
General Electric Co.	—
Gibbs-Brower Co.	72
Glens Falls Machine Works	18
Goodyear Rubber & Tire Co., Inc.	—
Gottesman & Co., Inc. M.	39
Grasselli Chemical Co.	—
Grissinger Machine Works.	72
Gumbinsky Bros. Co.	69
H	
Hamblet Machine Co.	10
Hammermill Paper Co.	41
Hammond, R. F.	3
Hanna Paper Corp.	5
Hardy, George F.	75
Hardy & Sons Co., Wm. A.	77
Harrington & King Perforating Co.	68
Harris Bros. Co.	—
Hayton Pump & Blower Co.	6
Heller & Merz Co.	14
Hendrick Mfg. Co.	9
Hercules Powder Co.	10
Hermann Mfg. Co.	—
Hicks, Daniel M.	77
Higman Co., John W.	69
Hoggson & Pettis Mfg. Co.	5
Howard Paper Co.	61
Hudson-Sharp Machine Co.	—
Hunt Machine Co., Rodney	—
Huyck & Sons, F. C.	14
I	
Improved Paper Machinery Company	17
Independent Die Co.	—
International Pulp Co.	76
International Salt Co.	—
J	
Jeffrey Mfg. Co., The	—
Jenkins Bros.	4
Jenssen Company, G. D.	—
Johaneson, Wales & Sparre, Inc.	—
Jones & Sons Co., E. D.	19

Index to Advertisers

Page

K

Kalamazoo Vegetable Parchment Co. 61
Kalbfleisch Corp., The 44
Katzenstein & Keene, Inc.. —
Keller Co., E. J..... 69
Keystone Lubricating Co. .....Front Cover.
Klipfel Mfg. Co..... —
Knox Woolen Co. 68
Kuttroff, Pickhardt & Co., Inc. 67

L

Lacey & Co., James D..... 3
Lagerloef Trading Co..... 12
Langston Co., Samuel M. .. 29
Lawrence Bag Co., The... 6
Lennig & Co., Inc., Chas... —
Liberty Paper Co. 3
Lindsay Wire Weaving Co. 83
Lobdell Car Wheel Co..... 4
Lockport Felt Co. 16
Lombard & Co., Inc. ..... —

M

Machinery Co. of America —
Management Engineering & Development Co. 76
Manhattan Perforated Metal Company ..... —
Mead, Patton & Co..... 8
Mead Sales Co..... 16
Menasha Wood Split Pulley Company ..... —
Mendelson Bros. Paper Stock Company 76
Miner-Edgar Co. 65
Missisquoi Pulp & Paper Co. 80
Morse Chain Co. 74
Mountain Mill Paper Co... 61
Mundt & Sons, Chas. 74

N

Nash Engineering Co. 17
National Aniline & Chemical Company 2
New England Tank & Tower Company 83
Noble & Wood Machine Company ..... —
Norwood Engineering Co.. 74

O

Oakes Co., Roland T. ..... —
O'Brien, Clarence A..... 75
Oliver Continuous Filter Company ..... —
O'Neill Wire Wks., Joseph 80
Orr Felt & Blanket Co... 68

P

Paper Makers' Chemical Co. 81
Paper Manufacturers Co., Inc. ..... —
Penn. Paper & Stock Co. .. 76
Pennsylvania Salt Mfg. Co. 74
Perkins - Goodwin Co.... 44
Perkins & Son, Inc., B. F.. 11
Pickles, W. F. ..... —
Potdevin Machine Co..... 9
Price & Pierce, Ltd. 77
Pulp & Paper Trading Co... 8
Pusey & Jones Co., The ... —

R

Reeves Pulley Co. ..... —
Republic Flow Meters Co. —
Riley Stoker Co., Sanford.. 75

Page

Roberts Mfg. Co., F. W... 74
Ross Engineering Corp., J. O. 75
Ryther & Pringle ..... —

S

Salomon Bros. & Co..... 76
Sandy Hill Iron & Brass Works 13
Saranac Machine Co. ..... —
Schorsch & Co..... 67
Sewall, James W. 75
Shartle Bros. Machine Co., The 72
Shepard Electric Crane & Hoist Co. ..... —
Sherman Paper Co..... 76
Shuler & Benninghofen... —
Simons, V. D..... 75
Smith, Frederick L. 75
Smith & Winchester Mfg. Company 7
Smithe Machine Co., F. L. —
St. Regis Paper Co..... 5
Star Clay Co. 69
Stearns Lumber Co., A. T. 6
Stebbins Engineering & Mfg. Company ..... —
Stickles Steam Specialties Co. ..... —
Stratford Company 76

T

Taylor, H. S. 75
Taylor, Stiles & Co..... 8
Technical Economist Corp. 71
Texas Gulf Sulphur Co.... 7
Textile-Finishing Machinery Company ..... —
Thwing Instrument Co. .. —
Toledo Scale Co..... —
Tomlines & Son, T. L... 75
Train, Smith Co..... 77
Trimbey Machine Works.. —
Turner, Halsey Co..... —
Tyler Co., W. S. 83

U

Union Screen Plate Co.... 11
Union Sulphur Co. 67
Union Talc Co..... 77
Union Wood Flour Co.... 76
United States Talc Co..... 75
United States Testing Co., Inc. 76

V

Vacuum Oil Co..... —
Valley Iron Works..... 35
Van Noorden Co., E..... 83
Victory Bag & Paper Co. —
Vitale & Rothery 75
Vortex Mfg. Co..... 15

W

Wallace & Co. Jos. H..... 75
Waterbury & Sons Co., H. 76
Waterbury Felt Co..... 81
Waterville Iron Works.... —
Wausau Sulphate Fibre Co. 5
Western Paper Makers' Chemical Co. 81
Westinghouse Electric & Mfg. Co. 37, 69
West Virginia Pulp & Paper Company 61
White Tar Aniline Corp.. 4
Williams Co., C. K..... 74
Winkler & Bro., Isaac..... 83

Z

Zaremba Co. 8

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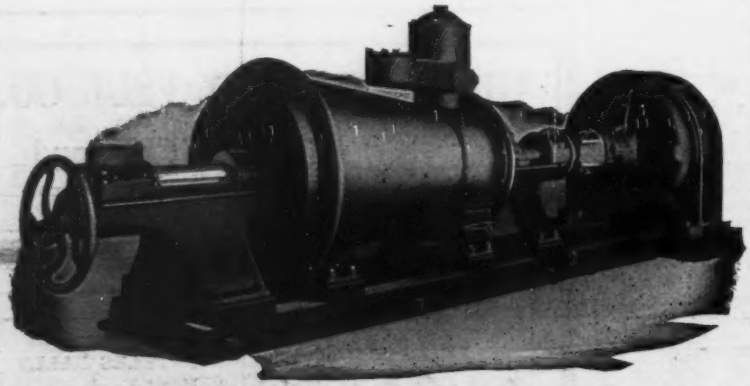

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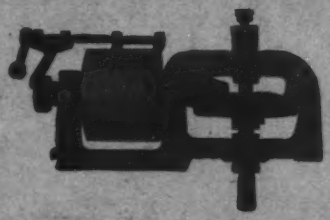

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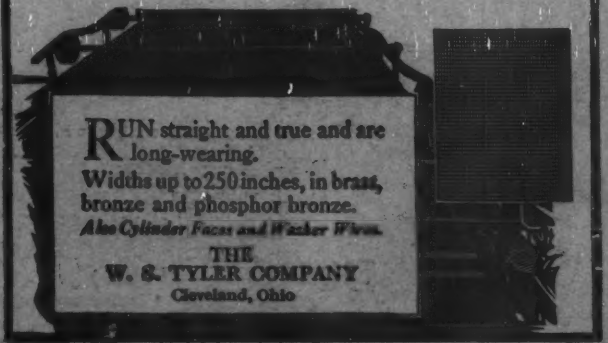

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